



Are State Examining Boards Necessary for the Preservation of the Standard of the Dental Profession ?

By G. CARLETON BROWN, D.D.S., Elizabeth, N. J.

Last winter I read a paper on Dental Education before a Dental Society; in it I quoted a number of answers to the questions of the New Jersey Board, made by graduates of recognized colleges; the paper was published in several dental journals, and the following is an editorial on the subject from the Western Dental Journal:

"Dr. G. Carleton Brown has amazed the profession by publishing some answers, made by graduates, to the questions of the New Jersey Examining Board. Such ludicrous evidence of ignorance of the science of dentistry and of spelling and expression, compels the belief that some wag, who never was inside of a reputable dental college, set out to stir up the 'hornets,' by answering the questions in the most outlandish way possible. Out of the ten questions and answers published by Dr. Brown, there is not one answer which denotes any knowledge of the subject whatever. The Jersey board has undoubtedly been 'taken in.'"

Comment is hardly necessary. The young man, from whose written examination the extracts were made, is a graduate of one of our best known institutions; he has been before the Board several times, and I can assure you that he does not consider the examination a joke—neither does the Board.

The unfortunate aspect of the whole subject of dental education seems to be the apparent arraying of the colleges against the State Examining Boards; this is not right, and is, I believe, entirely unnecessary. Why the teachers in some schools should feel called upon to resent criticism of the methods of institutions, the names of which are not mentioned, I do not see. If they consider themselves blameless, why should they assume the equivocal position of defenders? I have said the teachers

of some schools—there are others who have stood, and still stand, by the Boards in their endeavors to create and maintain a high professional standard.

**Peculiar
College Methods
of Examination.**

In some schools, students are carefully questioned, before they are given their final examination, as to where they intend locating; and the severity of the examination is gauged according to the proposed location, and students are discouraged by their instructors from presenting themselves before the Boards of certain States. That such are the facts I have been assured by a large number of graduates.

The following is from the written statement of a graduate who passed the New Jersey Board a short time ago. At the time of making the statement, he said he would willingly make affidavit to it, and that he gave the facts as he thought a great injustice was being done the Examining Boards by the professors, in giving wrong impressions to the students of the kind of examination they would be subjected to and the treatment they would receive.

The gentleman's statement is as follows: "Prof. Z., of _____ College, of which I am a graduate, when I came before him for examination, severely criticised the New Jersey Examining Board and asked me if I intended to go before that Board; and when I replied that I did, he greatly discouraged me from doing so. Prof. Z._____ also said that if I was going to New Jersey he would give me a tough examination. I told him that I thought he should not give me any questions that he had not lectured on. Prof. Z._____ then said that he would give me the New Jersey examination questions. I told him that this would suit me.

"The Professor then examined me on illuminating gas and its manufacture, the manufacture of steel by the Bessemer process, and such things as this, none of which I found, when I came before your Board, were in the New Jersey examination. In fact, not one question which Prof. Z._____ gave me was in your examination. I did not have one question in my Board examination that did not pertain directly to dentistry."

This must not be misconstrued into a defense of anybody; it is simply a statement to show where the blame must be placed, if there is to be friction between the educators and the Boards.

The subject is so broad that I must confine myself to two features of it; one being the failure of the colleges to live up to the requirements of the National Associations of the Faculties and Examiners in regard to preliminary education; the other, the graduating of men who are absolutely ignorant of the important features of *Materia Medica* and *Dental Therapeutics*, more particularly in regard to *Anæsthetics*.

I do not mean to say that the colleges—specimens of whose educational work I will show you—do not educate properly; they do, many of them. My criticism is, that they do not insist on a proper preliminary education, and that they graduate men who are utterly incompetent to practice dentistry. Who so dangerous as the man of little knowledge? Who are they who make the charlatans and quacks that disgrace and belittle our profession?

I might tell about the careless way in which the mechanical departments of some institutions are conducted. I can show specimens of the handiwork of graduates, that astounded the members of the National Association of Dental Examiners, last summer at Saratoga.

I could prove how graduates have come before us and, after making a total failure of their work, have acknowledged that they never had a blowpipe in their hands before. I could also show how these young men passed their practical examination in college, by having their graduating cases made for them, and, sad to say, in many cases, made, for a consideration, by the very man who was paid to teach them—their own demonstrator.

I have had exact copies made, of a number of questions and answers from the examination papers of four applicants for licenses in New Jersey, all being graduates of different institutions; all of these papers were written in October last, one of the applicants having graduated in 1895 and one in 1896. I will designate these exhibits as Nos. 1, 2, 3 and 4.*

Twenty-six years of age; graduate of ———

Exhibit No. 1. College.

Q. What is Pathology?

A. Description of diseases.

Q. What is prognosis?

A. Uses of drugs and medicines.

Q. What are the proportions of earthy and animal matter in bone?

A. 2-5th to 3-5th.

Q. The earthy matter is composed chiefly of what?

A. organic.

Q. What is plethora?

A. Deficiency of blood.

Q. What is anæmia?

A. Excess of blood corpuscles. (Red.)

Q. What is the proportion of white blood corpuscles to red in health—in disease?

*I have personally examined the papers from which these extraordinary answers have been quoted and I find these selections to be correct in language and orthography. Furthermore, by looking through the complete sets of the examination papers, returned by these dental graduates, I am in a position to state that the quality of their education may be fairly estimated by the specimens here presented.—Editor.

A. 5 million to a square milimeter.

Q. What is the cause of abscess?

A. Product of putrefaction.

Q. What is caries of teeth?

A. Breaking down of bone tissue.

Q. What are the stages of anæsthesia?

A. First sleep produced. patient becomes rigid and have long deep inhalations then patients muscles relax and then have short inhalations or snoring.

Q. How do the physiological effects of chloroform differ from those of ether, when administered?

A. Chloroform in an adult takes more effect on the heart and Ether does not in a child chloroform is better to be given.

Q. What is shock?

A. A sudden change to the system.

Q. What is hyperæmia of the pulp?

A. Decrease of blood to the pulp.

Q. What are the physiological effects of sulphuric ether when inhaled?

A. It produces sleep.

Q. What are the principal local anæsthetics?

A. Wilson's. Euchrisma. Methyline.

Q. What is the action of an antipyretic?

A. Germ destroyer.

Q. What is an antiseptic?

A. germ preventative.

Q. What is the antidote for opium?

A. Sweet milk.

— years of age; graduate of ——— College.

Exhibit No. 2. Q. What is the proportion of white blood corpuscles to red in health—in disease?

A. one to every five millions of red.

Q. What is the cause of abscess?

A. Suppuration

Q. What is shock?

A. An irritation in the nerve centers.

Q. In what portion of the tooth does the sense of touch reside?

A. In the dentine. Bodecker says in the enamel.

Q. Give the classification of medicinal substances under the following heads: Neurotics. Escharotics. Hæmetics. Topical Remedies.

A. Medicines used in nervous diseases. Hæmetics stops internal hemorrhages Topical Remedies; uses of electricity.

Q. What is sialagogue? Name three.

A. It is a decided cathartic.

Q. What are the stages of anæsthesia?

A. The stage choking sensation in throat and struggling, second a stage of violent struggling and third a complete anæsthesia.

Q. Name three vegetable tonics.

A. coffee, wine of cocoa and

Q. What is the antidote for carbolic acid?

A. Atropine and belladonna.

Out of the sixty-two questions, this candidate received credit for answering thirty correctly, although the quality of the answers was so poor that he hardly deserved any credit.

27 years of age; graduate of ——— College.

Exhibit No. 3. Q. What is pathology?

A. Pathology is the study of disease tissue, microscopically.

Q. What is prognosis?

A. To locate disease, to find out the cause and

Q. What is anæmia?

A. Is an excess of white corpuscles in the blood.

Q. What is the cause of abscess?

A. Suppuration, the breaking down of the tissues.

Q. What is the symbol of nitrous oxide?

A. N O.

Q. In what class of patients should the injection of cocaine, or any preparation containing it, be carefully avoided?

A. In anæmia people. In large fleshy people.

Q. What is the action of an antipyretic?

A. It has an action on sweat glands prevent them from secreting.

Q. What is Argenti Nitras? Antidote.

A. Lime.

Q. What is shock?

A. A sudden sensation produced by the nerve.

Q. What position in a tooth do the odontoblasts occupy?

A. At the crown some are perpendicular and they branch to a horizontal at the neck.

Q. In what portion of a tooth does the sense of touch reside?

A. Between the enamel and dentine

Q. How does chloroform differ in its action from ether?

A. The patient is not kept under it as long as ether.

Q. What are the principal local anæsthetics?

A. Nitrous oxide, very seldom used cocain.

Out of the sixty-two questions, this candidate failed to answer sixteen, answered twenty-seven wrong, of which the above are a few samples, leaving only nineteen correctly answered, and these replies were in a number of cases very ambiguous; not one question on anæsthetics was answered correctly, most of them being skipped entirely.

24 years of age; graduate of ——— College.

Exhibit No. 4. Q. What is Pathology?

A. Pathology is the study of that disease to which teeth are

Q. What is prognosis?

A. Prognosis is the foretelling of the probable or possible termination of the disease.

Q. What is plethora?

A. Deficiency of red corpuscles.

Q. What is anæmia?

A. Too much blood

Q. What is the proportion of white blood corpuscles to red in health—in disease?

A. About one red to six hundred white in health. In disease the white are the most numerous.

Q. What is shock?

A. The sudden checking of the nerves from fright.

Q. What is a diuretic? Name three.

A. That which increases the nasal discharge. Amonia Salt Soda ozone Peroxide of Hydrogen

Q. What is the action of an anodyne? Name three.

A. It acts on the whole system produces sleep Belladonna.

Q. What are the physiological effects of Sulphuric ether when inhaled?

A. It has a sweetish taste and acts on the olfactory nerve produces sleep.

Q. What are the stages of anæsthesia?

A. First it has a nauseyness feeling and second the muscles be rigid and after relaxation of the muscles takes place.

Q. How do the physiological effects of Chloroform differ from those of ether when administered?

A. Chloroform acts quick and direct on the heart and interfere or diminishes circulation. Ether increases circulation.

Q. What are the dangerous symptoms?

A. Throthning coldness.

Q. What are the effects of inhaling nitrate of amyl?

- A. It produces nausea.
- Q. What is fever?
- A. Heat caused by too much nourishment of blood.
- Q. What relation to dental caries do the micro-organisms bear?
- A. They carry on decay when located in caries. They are one and the same thing.
- Q. What is the cause of scurvy? Give symptoms.
- A. Swollen gums Symptoms fever in gums
- Q. What are the signs of danger in ether narcosis?
- A. Noises in throat change of color from pink to purple the optic nerve is effected.
- Q. What are the principal local anæsthetics?
- A. Cocaine Arsenic Oil of Cloves
- Q. From what is cocaine obtained?
- A. It is obtained from a flower or bud.
- Q. Name three vegetable tonics.
- A. Belladonna nux vomica Bitter Beer orange peel Quinine.
- Q. Name three mineral tonics.
- A. Arsenic Tinct of Iron Quinine.
- Q. Name three antipyretics.
- A. Morphia Cocaine aconite Belladonna.

These are samples from the graduating classes of four different colleges; there are other lists almost if not quite as bad. Of course, I do not mean to say, that many such men get through, and I do not believe they do, but must there not be something radically wrong when even one such man is graduated? It is not at all likely that New Jersey gets them all; in fact we have more than other States as I have shown that graduates are discouraged from coming to us.

But to the point. If even with the State Examinations staring them in the face, the colleges graduate such men as have made these deplorable exhibitions, what would they not do if there was no check?

So long as the teacher examines his own students, so long will State Boards be necessary, and no longer.

With the evidence which I have submitted, I ask: Are State Examining Boards necessary for the preservation of the standard of the dental profession?

Non-Cohesive Gold, Its Merits and Manipulation.

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Illustrated by W. J. Brady, D.D.S.

PART IV.

The cavities previously shown have all had more or less pronounced extensions from the main portion. By consulting the text, it will be seen that these extensions have always been packed with cylinders early in the process of filling. The general rule, therefore, may be laid down that all extensions, crevices, fissures, or corners connecting with cavities should be filled first, and in such a way that the final lateral spreading of the main body of the filling serves to mechanically hold every part in place.

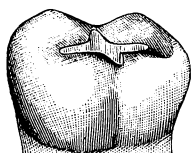


Fig. 46

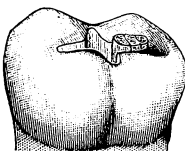


Fig. 47

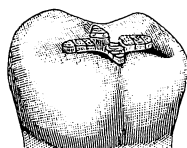


Fig. 48

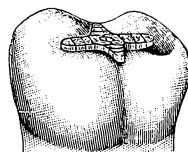


Fig. 49

Method of Filling Multi-Cornered Cavities.

The lower molars, in particular, are usually found with from one to four extensions to the cavity. Fig. 46 shows a cavity very common in lower second molars, and with four extensions—a star shaped cavity. Following the rule, the extensions are filled first. Fig. 47 shows the posterior extension filled up to the main body of the cavity, the cylinders having been inserted and condensed thoroughly into place by the foot-plugger and mallet. It is very easy to fill this extension, as the cylinders are driven directly backward, and the access is direct. The lingual and buccal extensions are next filled in the same manner. It is a little harder to direct the foot-plugger so that it drives the cylinders directly into these fissures, but with care it may be done, and all these three extensions thus be solidly packed. The anterior fissure, or point of the star, is filled by drawing the cylinders forward with the foot-plugger by hand pressure, and with care, may be nearly as solidly packed as the others. Fig. 48 shows all the extensions filled, ready for the final cylinders. These are inserted into the main portion of the cavity, using as large cylinders as the space will permit, driving the first one back

with the foot-plugger until packed solid. When condensed back, it will fill the cavity about half full. Another, as large as can be introduced (or others if needed), is inserted into the remaining space, taking care that it reaches entirely to the bottom of the cavity. When fully filled, as shown in Fig. 49, one or more wedge cylinders are inserted into the main body of the filling, which is then condensed and finished as before described.



Fig. 50.

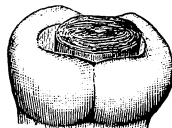


Fig. 51

Many more cavities involving extensions from various directions might be described, but the writer believes that a sufficient number have been illustrated to give the practitioner an insight into the manipulation required in such cases.

**Large Cavities
with
Frail Walls.**

Fig. 50, represents a cavity that requires care in filling, no matter what the material used. It is so large that a cohesive gold filling would be quite an undertaking, and necessarily so expensive as to prohibit its employment in a majority of cases. If amalgam is used there is such a body of the material to shrink, "flow," or change its shape, that the margins are found leaky in a very short time, with further weakening of the already frail walls, and usually bringing about the operation of gold crowning in a very short time. A non-

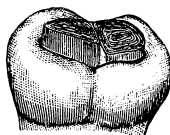


Fig. 52

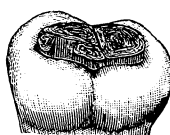


Fig. 53

cohesive gold filling will protect the margins perfectly, as long as the cavity walls stand, and if not too frail to begin with, the tooth may do good service for years. Such a filling is inserted after this manner. A very large cylinder is prepared and inserted as shown in Fig. 51. This cylinder contains fully a sheet of gold, and is of the same length as before recommended, i. e., it projects one-fifth the depth of the cavity above the cavity margin. This cylinder is condensed backward against the posterior wall by the foot-plugger and mallet, gauging the mallet force used, by the strength of the wall. In all events, the cylinder must be

well condensed with the foot-plugger. This is the secret of success in cases of this kind, and failure will inevitably result unless this is observed. All, or almost all the lateral condensation must be accomplished by the foot-plugger and hand mallet rather than by "wedging" at the last of the operation, as with the more or less frail walls present wedging will split the tooth before all the desired condensation occurs. The very large diameter of the cylinders also allows too much endwise condensation on

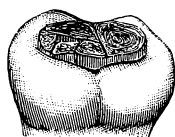


Fig. 54

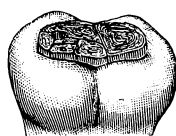


Fig. 55

the final malleting down, causing them to be too short and not fill the cavity full enough unless very thorough lateral condensation occurs before the final or endwise condensation. This lateral condensation is the very important point in very large cavities, and must be done as the circumstances best permit. Of course the greatest force should be directed against the strongest wall, and the least against the weakest, and the mallet strokes should never be hard enough to endanger the wall. The malleting must be continued until thorough lateral condensation occurs, which can be accomplished with gentle strokes if kept up long enough.

On no account must small cylinders be used, as they will not stay in position after condensing back; only very large cylinders are to be used. A full sheet of gold is often rolled into one cylinder. As large a

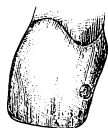


Fig. 56



Fig. 57



Fig. 58

cylinder as can be inserted will usually condense into about half the space which it first occupies, so that the cavity may be filled nearly half full with the first cylinder, which wedges so firmly in place that it will not loosen by subsequent operating. Another cylinder as large as can be inserted is introduced into the remaining space, and condensed to one side, or more or less diagonally across the space, preferably toward the lingual side, as this gives the most direct access for the remaining cylin-

ders to be introduced, as is shown in Fig 52. These two cylinders fill about two-thirds of the cavity. They are followed by others as shown in Fig. 53, where a good sized cylinder is condensed back against number one and alongside of number two. A fourth cylinder is drawn forward by the foot-plugger as tightly as possible, into the anterior corner of the cavity. The space between numbers three and four is filled in by another cylinder, condensing the same diagonally backward and outward (buccally), as in Fig. 54.

The center is filled in with one or more cylinders, and the wedge instrument inserted where the least lateral condensation has occurred in the body of the cavity, as in Fig. 55.

Judgment must be used in manipulating this wedge in such a case, always directing the main force away from the weakest walls and against the strongest. For example:—If the buccal wall is very frail the wedge instrument should be made to do its enlarging as much as possible antero-posteriorly, and not linguo-buccally. If the posterior wall is weak, and the anterior one strong, the wedge instrument should be drawn strongly forward, while being worked downward in between the cylinders. The wedging should not be overdone in cavities of this kind. Properly done, these large cavities are not particularly hard to fill, though they nearly always will be found somewhat harder than the ones described heretofore. The description of this one filling should be sufficient to cover the treatment of all cases of this kind.

**Method of
Filling Small
Cavities.**

Figs. 56, 57 and 58 show small cavities which are often met and which can be advantageously filled with non-cohesive gold, and very quickly. In case of the central, Fig. 56, this treatment can only be employed when there is space, either from loss of the adjoining tooth, natural space, or room created by some means of separation. These cavities are filled with a single cylinder, as large as can be inserted, wedged through the center by the insertion of the small wedge instrument, followed by a very tightly rolled wedge cylinder of gold. Great care must be taken not to allow the instrument to touch the walls of the cavity, but to insert it directly into the middle of the cylinder, so that some gold may always be between the instrument and the walls, or the tooth may be split. Either of the teeth shown in Figs. 56, 57 or 58 may easily be split by the wedge instrument, so great is its spreading force, but the lateral—Fig. 57—especially as shown by the dotted line in Fig. 57, must not be overwedged, or a piece will be split out on the lingual side. Fillings of this kind are applicable to many small cavities arising from pits or imperfections in the enamel in various teeth, and can be inserted and finished in the same or less time that it ordinarily

takes to apply the rubber dam. This method of filling with a single cylinder should be confined to small cavities, however, and not be attempted where it would take a cylinder of much size to fill the space, it being preferable in such cases to use two or more smaller cylinders, wedging another in between them.

**Labial
and Buccal
Cavities.**

Cavities on the labial or buccal surfaces of the teeth bordering the gum line are very troublesome to the dentist in many ways, and especially trying in case of filling with cohesive gold. To exclude moisture is difficult at best, and especially so if the cavity extends beneath the free margin of the gum, which causes resort to all manner of ligatures, gum retractors and clamps. These are severe upon the patient, and even with the best of them, the operator is hardly free to use both hands, for some unprovided for place *will* leak and require the use of one hand to hold a stoppage of some kind; or some ligature must be pulled "just so" to stay in place at all; or many other troublesome details may prevail which need not be mentioned. In case of cavities upon the buccal surfaces of molars it is rare indeed to find a cohesive gold filling attempted, amalgam being the best that these cases usually receive. In consequence of the necessarily hurried work required, together with the other difficulties, these labial or buccal cavities are seldom well filled, even when gold is used, the cavity margins hardly ever being really well protected. Certainly, in no other class of cavities is decay more prone to continue in spite of our fillings; therefore the very best possible is indicated.

Nowhere is non-cohesive gold more useful than in these cases, for it not only relieves the operator of all trouble with the rubber dam and its accompanying vexations, but it gives a most perfect adaptation to cavity walls, in a place where it is most needed, and at the same time is easier of manipulation than the cohesive gold. It further renders possible, many gold fillings where the pain of clamps, etc., deters both patient and dentist from using anything but cement, gutta percha or amalgam. While a relief in almost any labial or buccal cavity to which it is adapted, it is a positive blessing to our frail and nervous patients, many of whom suffer from an increased number of these cavities from vitiated secretions due to a low state of health. By its use, many gold fillings can be inserted in buccal cavities, in molars that are usually given over to amalgam, to the lasting benefit of the teeth involved by reason of the better material.

There are limitations, however, to the use of non-cohesive gold in this class of cavities. It must be remembered that the cavity must possess four walls, or practically so. If the cavity extends around the

"corner" or upon the proximal surface, in addition to being upon the labial or buccal surface, non-cohesive gold can not be successfully used.

Fig. 59 shows such a cavity, while Fig. 60 shows one adapted to its use. In the preparation of these cavities it must be remembered that a shallow cavity cannot be easily filled, and therefore the cavity must be made deep enough to insure success. These cavities are ordinarily found quite shallow, and also are nearly always very sensitive, so that this rule might be easily neglected. The undercut should also be slightly more than in the cavities previously described. This is usually best made by an inverted cone bur, making just a little more undercut than the natural bevel of the bur makes. Deep undercuts, such as made by wheel burs, should be avoided. If the cavity is of considerable diameter, it must be made correspondingly deeper as well, though the pulp must not be endangered by reckless deepening. In filling, a cylinder of gold is introduced and condensed to place by the foot-plugger as in Fig. 60. The cavity being more or less shallow, the tendency is to force the cylinder out of the cavity over the walls, the cylinder seeming "top heavy,"



Fig. 59.



Fig. 60.



Fig. 61



Fig. 62

as it were. To counteract this tendency of the cylinder to raise up out of the cavity, it should be held down by a broad foot-plugger, the foot resting flatly against the end of the cylinder. *This is very essential in all shallow cavities.* A second cylinder is inserted and condensed to the opposite end in the same way, as seen in Fig. 61.

The access is direct, and each cylinder may be condensed thoroughly into its respective place by the foot-plugger. The third cylinder is inserted and condensed against the cervical wall. The access to this is most direct, and the velvety, non-cohesive gold adapts itself to the wall even in the most minute crevice, giving the most perfect protection possible. The fourth cylinder is carefully worked into its place with the aid of the long thin point of the foot-plugger, H, so that by the time it is introduced to the bottom of the cavity, it is quite well condensed laterally. In these cavities the lateral condensation should be effected as much as possible with the foot-plugger, leaving very little to be accomplished by the insertion of the final wedge, Fig. 62. If not well condensed laterally, before wedging, the wedges tend to "lift up" the filling from the bottom of the cavity, and of course force the cylinders out and cause

loss of the whole filling. The final endwise condensation must be very thorough.

In case of buccal cavities in molars, the proceeding is the same in respect to the preparation of the cavity, though it is easier to get a fairly deep cavity, than in the anterior teeth. The undercut is made a little greater than usual, as in case of the anterior teeth, and with an inverted cone bur in the same way. Fig. 63 shows such a cavity with the first cylinder of gold condensed into place. This cylinder is driven directly backward, and can be condensed very thoroughly. A cylinder may now be drawn forward to the anterior portion of the cavity as in Fig. 64. The remainder of the space is filled in by cylinders which are driven back

*Fig. 63.**Fig. 64**Fig. 65*

(distally) to the posterior portion of the cavity as long as space allows, the final cylinders and wedges being inserted as near the anterior end of the cavity as can be, as in Fig. 65.

With care, a perfectly adapted gold filling may be inserted as described, almost as quickly as amalgam, and be infinitely better in tooth saving qualities.

The writer believes that sufficient examples of all non-cohesive fillings have been given to enable any intelligent operator to fill a large number of common cavities, either by direct following of the examples given, or by combination of the various features from two or more cases as described. The following chapter will deal with the combination of non-cohesive and cohesive gold.

(To be continued.)

“Gold and Tin as a Tooth Filling Material.”**A Reply to Dr. Shumway.**

By A. C. CAMERON, D.D.S., Hanford, Cal.

Are we ever to be delivered from such papers as the one which the “*Cosmos*” has published in its May issue, from the pen of Dr. Shumway, of Plymouth, Mass.? In eleven pages of printed matter we are told that a combination of tin and non-cohesive gold makes a good filling. Is there a first year undergraduate in the United States who does not know it? I think not. Had Dr. Shumway confined himself to this statement, I would not think of offering anything in opposition to his remarks, but when a dentist of the present era quotes from such a fossilized book as “Harris’s Principles and Practice,” as he has done on page 329 of his essay, I can not, in justice to intelligent dentistry, refrain from offering a protest.

All followers of Dr. Joshua Tucker, of Boston, are to be congratulated on their ability to secure patients who will allow their dentists to fill one or two ideal cavities with non-cohesive gold, and then extract the remaining carious teeth for fear of secondary decay in the years to come. What, I wonder, does Dr. Shumway do with large compound approximal cavities in the anterior teeth? They can not be properly filled with tin or non-cohesive gold; consequently, in his practice, they must remain unfilled for, with his use of the mallet, outraged nature would but a short time tolerate a filling of cohesive gold.

To my knowledge, Dr. Shumway is the first to advance the idea that a carious tooth will spurn the contact of virgin cohesive gold, because of its crystalline nature, and yet resist with all the clinging power of its loving enamel rods, the removal of an oxydizing plug of tin. I wonder if he is one of those who have “caught on to crown and bridge work,” and on presentation of some large anterior cavities, advocates the devitalization of the pulps and insertion of crowns. If Dr. Shumway has never seen a perfect cohesive gold filling, one in which secondary decay will not occur, I would recommend him to Dr. C. N. Johnson, of Chicago, or Dr. Guilford, of Philadelphia.

Again, it is appalling to think of the damage done to the “alveolo-dental membranous organs” by such grand old apostles of amalgam as Dr. Flagg, and the president of the society who buys his alloy by the pound, to whom Dr. Shumway refers in holy horror. I would like to know that president, so that I could shake hands with him, for I know he is doing what is best for his patients.

Is it a known scientific fact that the tissues of the body will encyst a bullet of lead or tin, and so obviate the necessity of its removal, while a similar slug of pure gold would cause a fatal amount of inflammation and suppuration? If this is so, as Dr. Shumway asserts, why do modern surgeons think it necessary to probe for and remove bullets? Is it because the cartridge manufacturers alloy their lead with a dangerous amount of gold? But why continue? There is not a paragraph in the eleven pages, in which there is not an erroneous statement.

The pith of the article is contained in three lines. Near the first, he says that a combination of tin and gold makes a good filling, and at the last "We are aware of the imperfect manner in which this subject has been presented."

There is no doubt that a joint use of gold and tin, when indicated, has done splendid service, and will continue to do so, but on that account, are we to relegate all other tooth savers to a secondary position? Let us try to be so broad-minded that we may be able to give our patients the service best suited to their individual cases, and not narrow ourselves to that plane wherein our only hope for permanent work is based upon a filling of tin and non-cohesive gold.





President's Address.

By LEE HUFFMAN, D.D.S., Lexington, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

Since our last meeting the grim harvester, death, has gathered to his last home our beloved and honored friend, Dr. Francis Peabody, of Louisville, Ky. For nearly forty years he walked in our midst an example of all that is highest and best in our profession, and he accomplished as much as any man, who ever lived in Kentucky, to elevate and improve his chosen pursuit. He was an ornament not only to the Kentucky Dental Association, but also to mankind. In all the relations of life he discharged his duty with that simple fidelity and earnestness which marked him as the noblest work of God—an honest man. He had just reached the borders of old age before its sorrows and infirmities had descended upon him. He has been mercifully removed, as we trust, to a better and happier domain, there to reap the reward of those who fight earth's battles well. He has left to us and to his family a priceless heritage and a stainless name.

The Value of Associated Effort.

For a number of years Louisville has been the permanent place of meeting of this association. It has been thought a better policy to modify this arrangement by meeting in Louisville, and other towns in the State in alternate years, and we come now by cordial invitation to meet in this beautiful city, Owensboro, where we hope to have an interesting and profitable meeting. The good to be accomplished by association work, is manifest to all. Associated effort has elevated the standard of education, stimulated our literature, fostered scientific investigation and developed mechanical genius. Our most earnest and progressive men are found in our societies. That our meetings are not more largely attended is a matter of much regret, and what can

be done to increase this attendance is a question of vital interest. Clinics should be made a prominent feature in societies. Many men attend the annual meetings for this alone. Dr. Beadles, of the Virginia State Dental Association, has recently offered some good suggestions, which if properly carried out, he thinks would prove attractive. His idea is not to have so many clinics, but good ones. Select a few operators of known experience and ability, and have only one clinic in progress at one time. With the society in session, the president and officers in their places, provide only one operating chair upon a raised platform, near the president's seat. With the patient in the chair, and a free use of the blackboard the operator may explain fully what he intends to do. Being no longer students, oftentimes, an explanation or illustration is all that is needed, and all present may be able to go home and perform the operation. The clinician would thus have the attention of the entire association, and feel stimulated to do his best, and each one of the audience has an equal chance of seeing his work. Under such conditions, our best men would be more willing to accept invitations to give clinics. We all know how unsatisfactory clinics are, under the present system, both to operator and observer, and Dr. Beadles's plan seems to be worthy of a trial.

As we grow older and become more advanced and secure in our position as a profession, the need for new legislation regulating our practice becomes apparent. The object of such laws should be to clearly define the difference between the honorable practitioner and the quack. They should so explicitly describe some of the forms of malpractice, as to leave no doubt in the mind of the public, that such legislation is for the protection of society, as well as our own. The Kentucky Association feeling the need of a more complete law, appointed a committee at our last meeting, which will make its report at the proper time. Having had the honor of serving on this committee it gives me pleasure to speak of the admirable work of its chairman. The energy which he has displayed, and the interest manifested, seems to augur success for the undertaking.

**The
Progress of
Science.**

There has been nothing of a startling nature, in the last twelve months, pertaining to dentistry to report, but the wonderful strides made in other branches of science, have been so astonishing as to almost stagger our belief, and were all the projects which the brain of man has conceived during the past year to be brought to perfection, which no doubt they will be, early in the twentieth century, it would place that time as far ahead of the present, as the present is ahead of the stage coach days. Space forbids that I should enumerate all these inventions. It would but weary your patience and consume your time. In the science of medicine alone, for instance, the principle

of inoculation, which has already proven so effective against smallpox, diphtheria and hydrophobia, is being extended to the treatment of tetanus, snake bite and insanity. If these, and other undertakings equally as astounding, can be demonstrated to be successful, man would live his full allotted time on earth and die of old age at last, barring accident or violence. All these triumphs of science leads us to speculate on the future of our own profession. Our studies have been confined to *conditions* and *symptoms*, and very few have been interested in the *cause* of disease, or the theory of decay, while all have been interested in the *cure*. Will our knowledge of the etiology of caries and other diseases incident to the oral cavity, or our comprehension of antiseptics and their application, ever be so thorough as to promise us immunity from the troubles which we are called upon to combat every day, thus rendering the services of the dentist almost useless? If we cannot have this immunity from disease, can we ever hope to have that, which up to the present has eluded the investigation of the scientist, and inventor. I refer to the ideal filling; and when I say ideal, I mean everything which that word implies. It should be a plastic, easily and quickly manipulated, proper color, a perfect preserver, and indestructible. If you think these things are visionary I can only remind you of what science has accomplished elsewhere. No one at first believed in Morse or the electric telegraph, or Morton and his theories of anæsthesia. Who would have believed in the Röntgen ray with the power to penetrate such solid bodies as wood, metal, leather or flesh, as easily as the sun's ray penetrates ordinary glass, if it had not been introduced as an already demonstrated fact? Some of these and others have been in common use so long they cease to excite our wonder. With all our much vaunted progress, and it has been phenomenal, we have never been able to divest the dental office and its environments of its terrors, and every patient who leaves your chair does so with a sigh of relief and goes away with a lighter heart than he came.

What a boon to humanity it would be should dentistry of the future give us exemption from painful and protracted operations; when tooth extraction is abandoned, and artificial teeth known no more forever, then our science will have fulfilled its mission on earth, and a crown of glory will await all those who have been instrumental in bringing about this happy result.

Amalgam.

By Prof. H. B. TILESTON, Louisville, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

Among the questions submitted for discussion by local societies, formulated by the committee appointed by the American Dental Association at its last session, appears this one:—"In view of the recent investigations, has amalgam been a blessing or a curse to humanity?"

Considering the present almost universal employment of this material, and the high estimation in which it is held by, may I not safely say, the majority of the profession to-day, does it not appear like a waste of time to thrust it forward again as a subject for discussion? Suppose after due consideration it is judged to have been a curse, would there be any less amalgam used because of that verdict? Or if it is decided to have been a blessing, would that decision have the effect of increasing its use?

Not an ounce less or more.

The only result to be hoped for, from such a discussion, is a more extended knowledge of improved amalgams and methods of working them; the elimination of imperfections in both material and method; the substitution of the scientific for the unscientific; the attainment finally of the ideal filling material; a consummation most devoutly to be wished.

Towards such a result, tends strongly the searching investigation of Dr. G. V. Black, and such painstaking work should be encouraged to the extent of contributing funds, that the research may go on unhindered by a lack of substantial support. The idea that amalgam will be banished, is absurd. The hope that both material and method may be vastly improved, is rational and dwells in the breast of every progressive dentist.

Even if the question is seriously discussed, the verdict is a foregone conclusion. It will be:—

"The proper and judicious use of amalgam, has been, is, and ever will be a blessing to humanity. It becomes a curse only when it is abused."

Amalgam has been a bone of contention in the profession for over sixty years, and in all that time, it is a notable fact that those who condemned it most strenuously, have been the ones who averred that they had never used it. It may be argued that, as a matter of course, those

who condemned it, to be consistent, should not use it, but it may, with equal propriety be claimed that one who never had used amalgam could hardly be competent either to condemn or to recommend its use by others.

It is also a notable fact that those who ventured to use it, have soon fallen victims to its siren influence, and after once becoming accustomed to its employment in the many cases to which it seems peculiarly adapted, they could never consent to exclude it from their practice.

**Introduction
and Early Use of
Amalgam.**

Amalgam has had a hard struggle to attain its present comparatively exalted position as a filling material. It made its first appearance about the year 1826, when M. Taveau, of Paris, introduced what he called "silver paste," consisting of pure silver and mercury. Afterwards coin, being more conveniently obtained, was used in place of pure silver. Alloys of cadmium and tin were experimented with by Dr. Evans, of Paris, but owing to shrinkage and discoloration, were soon abandoned. Its introduction into this country in 1833 by the Crawcours, two French adventurers who opened an office in New York and did a thriving, though unscrupulous business for a time, was the signal for the beginning of a heated opposition to this material, which has never subsided to this day.

In 1841 the American Society of Dental Surgeons announced that any material containing mercury was injurious, and later declared its use to be malpractice. In 1845 it exacted a pledge from its members not to use it, and asserted that a refusal to sign the pledge amounted to malpractice. As many prominent members of the profession were using and advocating its use by that time, this action on the part of the society met with such violent opposition, that the requirement to sign a pledge was withdrawn.

About this time Dr. Elisha Townsend, of Philadelphia, introduced his silver, tin, amalgam which, in varying proportions of these metals, has been used more or less ever since.

About the same time Dr. J. Foster Flagg espoused the cause of amalgam, making some improvements in the silver tin alloy; and to his conscientious and faithful adherence to the use of the plastics, is due much of the credit for the present status of amalgam in the dental profession.

In looking through the first three volumes of the *Dental Cosmos*, which I have in my possession, beginning August, 1859, I found much that was interesting concerning the practice of dentistry at that time, and especially the standing of amalgam, and the fight that was then being waged against it.

An article written by one J. D. Harbert, giving the *modus operandi* of making an amalgam filling, is followed by this editorial comment from Dr. J. D. White:—"We publish the above article on the use of amalgam, because it is a *fair* statement of a *bad* practice, and we are willing that both sides of this *one-sided* question shall be heard. We did not believe that any one in our profession who was familiar with the history of the writers on amalgam, could venture to stake his reputation on so doubtful a foundation. We have never used it, nor have we ever doubted that some dentists have rendered it useful in their private practice, but we did not suppose that any one would venture to publicly advocate it, after so many able advocates have failed to sustain it."

Note the admission that he had never used amalgam.

A year later we find a report of a discussion on the subject of amalgam by the Pennsylvania Association of Dental Surgeons, in which such men as Drs. Buckingham, Peirce, Flagg, Fitch, Garretson, McQuillen (associate editor of the *Cosmos*), Barker and others, seem to vie with each other in lauding the material which, such a brief time before, had been so roundly condemned by Dr. White, and possibly some of these gentlemen themselves would have hesitated to publicly recommend it at that time.

From this period forward, the use of amalgam has ever been on the increase, not only because of the increase in the number of dentists, but because of an extending recognition of its remarkable adaptability to certain cases, until now, I venture the assertion, that there is not a practice in the country in which it is not more or less employed. There may be a few operators who never use it, but it is used in their offices, nevertheless.

**Amalgam
in Comparison
with Gold.**

Is it not a fact that we often use gold instead of amalgam, in cases where the latter material would conserve the tooth equally as well as the former, simply because we are influenced in favor of gold by its more beautiful appearance, and the higher skill required to insert it, which renders it consequently more attractive work to a capable man; or by the difference in the fee?

When about to insert a gold filling in a cavity on the occluding surface of an upper molar, if the patient asks the pertinent question, "would not amalgam do as well in that place as gold?" candor compels us to admit that it would, as far as saving the tooth is concerned.

There are many cavities, in which amalgam does better service than gold, and many too, in which gold could not be used at all, and were it not for amalgam, such teeth could not be filled with any degree of permanency. Large distal cavities in the molars, especially the third

molars, buccal, and certainly all lingual cavities in the posterior teeth, offer a field of operations in which amalgam has a monopoly. By means of a band matrix made of German silver, adjusted to the remnant of a crown and ground to allow of proper occlusion with the opposite teeth, almost an entire crown may be built up with amalgam, if sufficient anchorage can be secured, thus restoring normal contour and function that will do service for many years. In such an operation the matrix should be left on until a subsequent sitting, when it is to be removed, and the filling carefully finished and polished. If as much care were bestowed upon the preparation of cavities, introduction and final polishing of amalgam fillings as we give to our gold work, we would have much less to criticise in amalgam.

Much of the prejudice against amalgam, and much of the opposition to it is prejudice, arises from the fact that the ease with which it can be manipulated brings its employment as a filling material within the capabilities of unskillful operators, just as the use of vulcanite by the unskillful, created a prejudice against rubber work: and because it encourages the growth of the ever increasing array of cheap quacks, so degrading to the profession of dentistry.

One way to elevate the status of amalgam in our own estimation, is to do a class of service with it that is worth a respectable fee and then demand it.

We can improve our amalgam work by attention to details, and by the application of such means as are brought to our attention from time to time by those who "observe, compare, reflect and record," as we are monthly admonished upon the cover page of the *Cosmos* to do. Let me direct your attention briefly to some of the results of Dr. Black's investigations.

**Results of
Prof. Black's
Investigations.**

One of the first things which he noted when subjecting amalgam that had set hard, to pressure in the dynamometer, was that all amalgams except copper amalgam flow continually, under continued pressure; that they yield in the direction of pressure, and expand in the direction of least resistance, or as he expresses it, they "flow." By means of the micrometer he has accurately measured the flow of different alloys having for their base silver and tin. He has arranged the results in tabular form, which table is to be found in the *Cosmos* for July, 1895. To this flow, which takes place in fillings in the mouth under the stress of mastication, he attributes the gradual drawing away from the cavity walls of amalgam stoppings in compound occluso-approximal cavities.

He found that copper added to the silver tin alloy, lessened the

flow, and any other metal added, increased it. Copper amalgam does not flow, neither does it shrink nor expand, for which reasons it is the best tooth preserver of all amalgams, and would be a perfect one, were it not for its well known tendency either to turn very black, or gradually disappear. We are all familiar with the fact that if it remains bright, and if it does not waste away, it turns black and discolours the tooth, For these reasons, most of us have felt compelled, though regretfully, to abandon the use of copper amalgam. For myself, I still find cases occasionally, wherein copper amalgam supplies exactly what is wanted, as no other material could.

There are many valuable points to be noted in the results of Dr. Black's work, to which, for want of time, I can only briefly refer.

He announces that the regularity of flow depends upon regularity of mixing. That the strength of the mass depends upon the distribution of mercury, and that mixes made in the palm of the hand are stronger than those triturated in a wedgewood mortar, because of the violence to which the alloy is thus subjected, resulting in a weaker mass when hard. That coarse cut alloys are stronger than fine cut, chiefly because of the greater amount of mercury taken up by the latter. The method of introduction of material into the cavity, also affects the strength of the amalgam, violent pressure and excessive burnishing tending to weaken the mixture.

Another point brought out in a subsequent paper in the *Cosmos*, January, 1896, presented somewhat as a correction of some former conclusions, is in reference to the effect of ageing of alloys, upon their shrinkage. His announcement that aged alloys shrink more than when freshly cut, and that the mercury is in no way responsible for shrinkage, is not accepted by all the manufacturers, who claim that since fresh alloy will absorb much more mercury than an oxidized alloy, there must of necessity be greater shrinkage in the former upon setting. As the shrinkage in either case of a good alloy is measured in ten-thousandths of an inch, observation in the mouth by a dentist is not liable to assist much in determining this question.

There are suggestions in the papers of Dr. Black which we can profitably adopt, and by applying them in addition to a careful and conscientious technique, we shall certainly establish amalgam as a blessing to humanity and not a curse.

Anterior Approximal Fillings.

By HOWARD VAN ANTWERP, D.D.S., Sterling, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

The frequency with which we are called upon to treat this class of cavities, and the importance to the patient of their correct treatment, suggests their consideration. Those patients usually coming to us for first attention are children, whose teeth require first class temporary fillings, and are thus carried along until they are sixteen to eighteen years of age, or until the quality of tooth structure and the nervous organization of the patient will admit of permanent filling. In older patients, these cavities are usually the result of single or repeated failures of previous fillings, or the decay is of such a character that nothing but temporizing treatment is possible, as in the presence of phthisis or other rapidly wasting disease. Leaving all these side issues, we may pass to the consideration of permanent approximal fillings in the anterior teeth.

Found as brown decalcified patches, or as small pin holes, these cavities often occur in the mouths of an appreciative and refined class of patients. They come to us at the first sign of decay, requesting the intervention of our skill between them and the discolored and misshapen rows of teeth, and vulgar displays of gold contours, that they see every day among their less fortunate friends. Often through neglect, or the failure of previous fillings, we find approximal cavities much more extensive, and their correct treatment is of more vital importance.

The first thing to be considered is the approach, and in this connection I am reminded of an incident of the good old days of the water-mill. Near the old home place we had such a mill, with a big dam, a big fire-bay and a big wheel down in the pit, and the water used to rush down there with great ambition. One day when the mill was running, a medium sized negro—a very devout old man—managed to fall into that fire-bay head first, and was just going “rite on frew,” when one of our notables, by hanging on to a projecting pin half way down the well, was enabled with the other hand to catch a providentially long heel and drag Mr. Coon “from a watery grave.” When on *terra firma* he “woofed and snorted” once or twice, and then said to his dripping deliverer, “Fo de Lord boss, I’s e had access to whar I’s e gwine!!” And what we want is “access to whar we’s e gwine,” and the only way of

properly securing it, is by abundant separation. In the case of the smaller cavities, space is essential to clear vision, and easy access; and in the larger ones to the securing of desired contour and proper finish.

**Methods of
Procuring
Separation.**

Many devices are employed to secure this separation, being varied to meet the indications. Thick rubber should only be used between the teeth of our younger patients, and only when it can be replaced within a few hours by gutta percha which should be allowed to remain for a day or two, until all soreness or irritation has subsided. Thin rubber dam may be used in starting teeth that are very close together, or where there is little roughness or cavity to retain anything else. The dam can be folded to greater thickness as the space increases, thus securing the space gradually, and with little pain. Cotton alone, firmly packed in, is a very good wedge, but is liable to wander and getting loose, will work up, or be pushed up by the patient, against the gum septum, much to the injury of that delicate membrane. It is sometimes necessary to press this gum out of and away from a cavity, but only in exceptional cases, where there is hypertrophy. Ordinarily I tie a surgeon's knot of waxed floss silk between, replacing this with a knot of doubled and twisted silk or linen floss, within a few hours, or on the next day.

When large open cavities or those easily opened present, place the ligature high up between the teeth, pack the cotton in firmly, draw the ligature around the cotton and tie tightly—"securing lateral expansion by circumferential compression," as I once explained to an inquisitive Boston girl.

Cotton wedges become offensive in a short time, and where sufficient I much prefer the knots, but the wedge oftenest used is the tied cotton wedge, because oftenest indicated and because it does the work.

Where there is soreness after wedging, it is best to open up the cavity or cavities and put in a gutta percha retainer, making an appointment for a day or two later.

Mechanical separators I rarely use, except in emergency cases. They are quite painful and even when well applied hamper the operator, and in cavities of any size, the jaws generally interfere with the finishing of the cervical border.

Space should never be obtained by filing, or with the diamond disk, because we should regard the natural contour of these teeth as of far greater value than any consideration of convenience or suggested expediency.

On the principle that a thing is half done that is well begun, with

this liberal separation secured, we may consider ourselves well advanced with our operation.

In adjusting the dam, which should be used in all cases, the holes should be punched as small as the quality of the piece will admit, leaving the right amount of rubber between the holes, so that it will not be stretched across the septum, but be full enough to tuck in around the necks of the teeth on both sides. Thus we have the gum pushed up out of the way and protected by the dam. By taking in two or three teeth at each side, the curve of the arch keeps the rubber from shutting off the light underneath, and the dam will not be in the way so much while finishing. Tied ligatures are rarely necessary, for by pushing the rubber up firmly and using the smallest holes, you will find it deflected or tucked in already, or only requiring a few touches with an explorer point to adjust it properly.

**Preparation
of Approximal
Cavities.**

In preparing small cavities I generally use the engine only, with clean sharp burs, doing the work quickly and thoroughly. I give the margins a decided bevel, looking out for any white or brown spots of disintegrated enamel, and usually testing the thoroughness of the excavation with a small sharp hoe, or hatchet excavator. Round and oval burs only should be used in this work, for wheels and inverted cones will leave angles that it is quite impossible to fill perfectly. These cavities, when cleaned out thoroughly, usually have a good retaining shape, and need no further attention in that direction.

In opening into large cavities, a large spoon excavator is best, breaking down every thin wall, and cutting back to good hard enamel, supported by dentine. The lingual wall should receive special attention. If thin, it should not be left, because it is impossible to condense gold against it, and if left, the filling will fail at that point. It should be cut away to solid tooth structure, and then dressed up with a half round file. We then have a wall against which we can condense or burnish, with as much force as required.

Our treatment of the front wall will not be so severe, on account of appearances; but even here there is danger of leaving too much enamel, with a place hard to fill just underneath it. The cervical border should be cut down square and solid, with a long hatchet excavator, slightly beveling the same and smoothening it with a freshly sharpened instrument. With a cavity thus treated, there is little more excavating to be done. Removing all the affected dentine, we probably have a saucer shaped cavity with modified retaining shape. If the cervical groove is of some depth already, I use the smallest oval wheels to deepen

it, and to cut in the angles at each end. If this groove is to be cut, I prefer round burs, new and of the smallest size. If properly cut it can be done quickly and with little pain. For some little depth we can usually cut without any pain at all. Mark out the whole extent of the groove and angles to this depth and then blow out all the debris, see that the bur is clean, and after a word of caution to the patient, make one continuous cut of two or three seconds and it is done. Hurt? Of course it does, but no more than one or two scrapes of a dull old excavator would!

The larger of these cavities may be described as somewhat the shape of an isosceles triangle, with the cervical border as the base, and the apex at the cutting edge of the tooth. If this apex when excavated thoroughly runs well down to the junction of the anterior and posterior enamel plates, or if the enamel at this point is in any way affected or weakened by caries or excavation, it is better practice to cut the point off, back to enamel supported by sound dentine. Rarely ever do we find the enamel at this point thick enough to allow of proper shaping without so weakening it, that it will not withstand the insertion of the gold, much less the strain of after use. With the point of the tooth out of the way, we are enabled to secure good retaining shape without cutting deeply or extensively. This retention should always be re-enforced by extending the palato-cervical and labio-cervical angles of the groove down the anterior and posterior walls of the cavity, well into the dentine, so as not to weaken the enamel walls. There is no danger of approaching the pulp, and we never have any thermal irritation from them.

It is rarely desirable or expedient to have any groove or undercut at the back or front borders except the angle extensions mentioned. If there naturally, it can be modified and put to good use—if not it can be dispensed with as well as not. The writer does not use retaining points, strictly speaking; they need to be deeper and there is much less anchorage surface than in the cervical groove ending in the two angles, and they need to be made with great pains—to the patient.

The last detail in the preparation of these larger cavities is to take a medium fine sand paper strip and draw it through a few times, bending it well over the back and front borders. This secures a perfectly smooth border with the sharp corner of the enamel margin beveled off sufficiently to prevent bruising of the enamel in filling, or powdering in burnishing and finishing.

If the excavation approaches anywhere near the pulp, or if the tooth is quite sensitive to cold air, the pulp should invariably be protected by a non-conducting layer of cement—(cement. See Century Dict.) then you never hear that complaint about “anything hot or cold”—

"cold air," etc. It is not safe to take chances of this thermal irritation subsiding after a time. It usually does subside—with the death of the pulp. The large majority of these dead teeth opened have shown that death was due to extensive cervical retaining pits in the median line of the tooth, or too near an approach of the death dealing conductor in the center of the cavity. If at all uncertain about the future vitality of the tooth, it should be filled with cement and the patient placed on the "return list," especially if quite young.

We are now ready for the insertion of the filling material which, of course, is gold, and the kind that you think works the softest and easiest. Starting at the palato-cervical angle usually, we use a large pellet of soft foil, or if the angle is large, two or more pellets, or enough to bind and to lap well over the margin. Follow the groove forward to the labio-cervical angle with large pellets of soft foil, or if the groove is shallow in the center, fill the anterior angle and gradually bridge over to the other, condensing thoroughly. With the angle margins and cervical border well covered with soft foil, we may begin to use annealed foil, in rather smaller pellets for the more thorough condensation. *Always be sure to have* sufficient gold under the plugger point before condensing against a border. We fill the cervical portion of the cavity more than full, condensing the edges with foot pluggers and burnishing down well.

Thus we proceed, with no attempt at contouring, to fill the body of the cavity nearly down to the point, where we wedge in the soft foil, allowing an excess to cover the deeply cutaway margin at the back. If the apex has an independent retaining shape, we may sometimes fill it first and then fill back to the approaching bulk of the filling. All undercuts and deeper portions of the cavity should be filled with soft foil, bringing it, where possible, in considerable quantity over the adjacent borders. Again, allow me to suggest that undercuts and points made with wheels and inverted cones can not be perfectly filled, consequently their use is inadvisable. With the cavity fairly filled and the borders nicely covered and all carefully condensed, and with a smooth surface, we lay on McDuff!—using gently flattened cylinders, and harder blows of the mallet, in building out contours. They should not be built out full, along the incisive line to a square corner, but should slope off toward the approximal space, allowing contact forces to glance off as much as possible. In large contours always use for building out, No.'s 40 or 60 cohesive, taking care to lay it evenly and well over the edges. By keeping the surface even it is easily determined when the cavity is full enough, and then it is pretty safe to put on a bit more, so that after burnishing and finish-

ing, the surface will present no depressions or rough places. Go over the entire surface with hand and engine burnishers, always rotating the latter so as to roll the gold toward the border, rather than away from it. The corrugated engine burnisher can be touched to a piece of soap for lubrication. It condenses better when lubricated and will not roughen the gold. The smaller cavities can usually be filled quite full of soft gold thoroughly condensed, annealed foil being used only on the surface.

**Methods of
Polishing
Approximal Fillings.**

In the matter of finishing, disks have their uses of course, but are apt to cut too much off the point and leave too flat an approximal surface; strips, on the other hand, leave a nicely rounded and smoothly contoured surface, if properly bent over at the front and back when drawn through. The narrow ones will finish a cervical border to perfection. If the cavity extend up under the gum, drawing the back of the strip over a piece of soap, will keep it from catching up and tearing the rubber and subsequently injuring that important and delicate membrane, the gum septum. I have found no strips more pliant and possessing more rapid cutting qualities than the emery cloth strips in various widths and two grits, coarse and fine. The emery cloth strips hold their grit and cut, and if oiled or coated with vaseline, will retain a large per cent. of the gold, more than enough to cover their cost. On account of their thickness, however, it is often necessary to open up the way for their use with some of the numerous thin papers, or linen backed strips. For a final polish, nothing is better than the French lava paper.

The palatal aspect of the filling, if present, should be finished down with carborundum points of approximate size and grits, always revolving in a direction that will tend to burnish or draw the gold over the margin. Finally, polish with graystone points and pumice stone.

The filling properly cut down and finished will present definite borders and a perfectly smooth surface, will have a well rounded contour, and when the space closes, will knuckle nicely with its neighbor while their necks will be somewhat separated. Being smoothly finished at this point, there will be no place for the lodgment of food and bacteria, nor rough overhanging edges to irritate the gum; and this gum septum not having been injured in any way, will close up over the filling and will remain perfectly healthy.

By way of negative recapitulation, I judge from my experience and observation that the causes of failures in these fillings are:

The leaving of weak and unsupported incisive corners; the leaving of frail walls to be broken down, or thin or sharp margins to be powdered by malleting, burnishing or finishing; failure to have sufficient gold under the plugger point when working against the margins; absence of beveled edges, lack of contour, and neglecting to secure a perfect finish.

Are We Drifting ?

By DR. W. E. GRANT, Louisville.

Read before the Kentucky State Dental Association, June 16, 1897.

Professions, trades and callings, like men, have their origin, growth and decline. It seems that each is brought forth to satisfy some need of civilization; as if the changing manners and necessities of each succeeding age brings to it those things required for its advancement. In times of civil tranquility, when commerce thrives, when the domestic life of the people is happy and secure, trades multiply and professions make their greatest advancement. A history of the learned professions during the current century could be well written from their progress in the United States alone. Each material improvement, every important discovery or valuable invention has been instantly tested and put to use. And this is perhaps more true of the medical and dental professions than of any others, for they have made greatest advancement in more recent years, and, as the doctrines of peace are, in our country, most fully followed by our people, professional improvements should here be most readily perceived. The history of the medical profession may be traced into remote antiquity and the modern strain is lost in societies of barber-surgeons and apothecaries.

**Early Days
of
Dentistry.**

The dental profession, however, is of more recent birth and is first seen as a calling in the person of Isaac Greenwood, Jr., who spent his early years as an ivory-carver and began to practice his new profession about 1770. The next step known is found around the revolutionary camp-fires; two Frenchmen and John Greenwood, the son of Isaac, there meeting and applying their skill jointly to relieve the suffering of the army. They met together, discussed such cases as arose among the soldiers, and so labored that success crowned their efforts, pain was effectually relieved, simple operations were performed, and the new calling was placed upon a firmer footing. Thus in 1781-82 was formed the first convention of dentists. After peace and prosperity were restored, the disbanded army spread the news of the new art broadcast. The Frenchmen returned to France and John Greenwood went to New York, where he enjoyed a lucrative practice. Upon the establishment of dental periodicals and schools and through the growth of the profession things gradually changed. A college degree and offi-

cial publications gave in 1840 and afterward a standing in the public estimation, so that in 1841 the people of Alabama recognizing that practitioners of dentistry must needs be men of learning and skill, provided in their laws that an examination should be passed or a diploma from a dental school be held by each person desiring to practice in that State. To-day such or better laws are to be found upon the statute books of every State and Territory of the Union. The ranks of the profession now form an army of between seventeen and eighteen thousand regular practitioners. They are to be found in every village and country town. Their increasing numbers minister to the needs of modern civilization and add materially to its advancement in increasing the general health and longevity, improving its sanitary condition, moderating hideous deformities, and soothing more hideous pain, while its youth are educated in these same arts by numerous schools and colleges where they receive instructions from the most gifted of its members.

But it is not alone in this regard that dentistry has advanced. Its internal growth has outrun its rapid increase in numbers. The simple operations of the Greenwoods are no longer used, their rude instruments are forgotten. In 1844 the anæsthetic effects of nitrous oxide was announced, by Horace Wells, which was followed by the discovery of the anæsthetic properties of sulphuric ether in 1846, by Morton. The dental engine was probably first used about the same time. Local and general anæsthetics have been gladly accepted and used to relieve the pain of dental operations, while the art of filling teeth has grown to the art of replacing them. We live in an age of wonderful progress.

Each mail brings news of newer instruments and methods. Within the past decade electricity has been brought to serve the ready dentist, while vague muttering of miracles produced by cataphoresis are heard by all. Again the effect of diseases of the teeth and their surroundings upon the general health of the patient have frequently led to consultations between the medical practitioner and dentist, while it is a much more frequent occurrence to find a regular family dentist consulted by his patient at regular and stated times. It is now known to the great majority of our enlightened people, that the care of the teeth is of vital importance, that upon it depends the pleasure of life and a comfortable old age. From the humble beginning to which I have drawn your attention this calling has become one of high standing and requires well developed minds, trained by careful study for the application of its principles. Like professions in general, it has been deemed valuable in proportion as it has satisfied the demands which called it into being. It is now recognized as a learned profession, the day of the tooth-carpenter is no more, and the dentist who pursues his calling with care, with integrity, and

having in mind only the welfare of his patients will reap a rich reward in the confidence of those who know him. The lawyer and the clergyman have to deal with mankind in a more public capacity: whether before the courts or in the pulpit, they are ever before the public eye. The architect is advertised on every corner by the product of his genius, and the doctor, though less frequently brought to public attention, is sometimes called upon to aid justice in the cases of accident or crime. The walks of the dentist are more quiet and therefore more secure.

<p>Relation of Dentists to the Public.</p>	<p>It may be safely said that every man who offers to occupy a professional position, declares to the world that he possesses as much knowledge and skill as may be necessary to do or perform any of the several acts which he may have to do while acting</p>
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in that capacity. This is a general axiom and applies as well in the law as in common sense, and as well to the finer arts as to the professions. If I give my watch to a watchmaker to be repaired he impliedly covenants that he possesses skill and knowledge in the repairing of watches. This is also true of the dentist, for if a patient comes with a tooth to be filled, he does not expect the tooth to be injured; furthermore, the dentist should possess such knowledge as will enable him to properly advise the patient what to do. But a further difference is this, that if the watchmaker destroys the watch through the failure to exercise such reasonable knowledge and skill as may be required of him, the owner can obtain another and require the watchmaker to make good the damage: but if the dentist fails to use such reasonable knowledge, and wrongfully extracts the tooth, or ignorantly or carelessly, in the extraction or repair of it, uses such dangerous methods as cause injury to his patient's health or inflict upon him unnecessary pain or loss of time, the patient can not recover, no matter how great damages may be awarded him, or how many the apologies; for neither can the one replace the lost member nor the other efface the memory of the pain.

In a trade the article is sought, it can be examined, and its value estimated, while in a profession the public seeks the individual, having confidence in his ability. Knowledge, skill and character count for everything. In a trade the supply and demand are almost uniform: in a profession the variety is infinite. Identity is almost impossible either in the attention required, or the individual whose services are sought. The dentist together with all experts deals not alone with individuals, but also with the public, for he offers his services to all men: and the whole public is entitled to such precaution as may secure to them the certainty that each dentist shall possess proper qualifications. This is the basis upon which this phase of dental jurisprudence rests, and it will be found

that restrictions have had their origin in the growth of the dental profession and its importance; that they have increased in stringency and have been adopted by other states, in proportion to the moral and intellectual standing of its members. This theory has advanced until to-day it is the accepted rule that the general public is entitled to place the fullest restrictions upon those seeking to practice this profession.

The increased facilities for the use of anæsthetics and their very dangerous character, the extreme care which is required in the manufacture and application of dental implements have left a wide margin for those unscrupulous persons who are willing to gull the ignorant by offering to perform operations, ordinarily painful, without pain or to prevail upon them to accept in return for money paid work which instead of proving a lasting benefit is but the product of unskillful hands hastily put together. These evils are felt most severely by those having least protection from them. Those who work day by day at the same counter or in the same factory have but little opportunity to ascertain upon whom in such matters they may safely rely. The word dentist to them means but one of a class more or less numerous and as they follow the greatest show, they are more readily entrapped. If the experiment proves unsuccessful, the whole profession will obtain the blame, and if then he seeks the true practitioner he may be too late and the injury beyond repair.

When the profession finds itself unprotected from evils of this character it begins to drift. It is loosened from the public favor: lack of professional qualifications in the few, engenders lack of confidence in all and the public and the profession both become losers.

Competition is the life of trade: without it business flags and the commercial spirit of the few, grown overfed, becomes sluggish and then dies out. This is true of professional life as well as in the grosser arts. Honorable contest for public preferment makes all better by bringing into active operation the hidden faculties of each. But this is true only when the competition is honest. The tradesman trying to defraud his customers is soon found out, but the professional man holds the key to the mysteries of his special art. Prominence brings profit and satisfaction to each dentist and should be sought by all. The best men do and always will maintain the standard of a scholarly profession but it is unfair to them and to every honest worker to compel them to meet and overcome prejudices created by ignorance and fraud, before they may reap the desired rewards, and this is more especially true of the young man who is either led into lower walks by the hope of speedy gain, or compelled to pass a long period of probation before he may obtain the public confidence.

Are we drifting? Our attention is drawn to the picture presented by the marvelous growth of our profession. From its infancy till to-day it has ever waxed stronger and greater. Its inherent power of life has caused it to branch as a great and noble tree whose proportions are admired by all and in the shadows of whose bows many find rest and comfort. Its advance is like that of a great ship forcing forward to its destination. Is it clean and pure as when the journey began or is it befouled with barnacles or does it become waterlogged and drift back and forth, the sport of wind and tide? This is the ever vital question before us. Do its members maintain the high standard of their preceptors, or, seeking gain to-day, destroy the hope of the morrow? The public look to us for protection from these barnacles of ignorance, and greed. It is our duty to act first, to demand that the profession be closed against those unworthy of the calling. We see the danger first. We should act. The voice of the young man first entering upon his duties calls for protection, the suffering patient calls for protection, while in many places even the men of maturer standing can hardly trust his fellow, who belittles his work and then abuses his patients. Shall we answer? The captain is responsible for the safety of his vessel. Are not we?

The Best Materials for Filling Teeth.

By DR. J. F. REED, Owenton, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

We have quite a number of excellent materials, and no one is "best" in all cases; neither has there been a perfect material discovered as yet.

I believe non-cohesive gold, tin and gold, and cohesive gold are the most reliable in most cases, my preference being in the order in which they are named. With proper manipulation one or the other can often be used, where we resort to amalgam or something more easily inserted than gold. Non-cohesive gold will adapt itself to the walls more easily than cohesive gold and should be used where cavities will permit; such cavities occur in the grinding surfaces, and in the buccal and lingual surfaces, where all the walls are in place, and in the front teeth, where there

is to be no contouring, as well as in approximal cavities in bicuspid and molars, where there is not too much of the grinding surface exposed, in which latter cases the cavity can be filled to near the top with soft, and finished with cohesive gold.

**Advantages
of Various
Filling Materials.**

The advantages of soft gold is its adaptability to the walls of the cavity, the rapidity with which it can be inserted, and the avoidance of the rubber dam in most cases, as a little moisture does not interfere with its working qualities. Then, too, by leaving the gold flush with the walls or margins of the cavity it is easily burnished down, adapting itself perfectly to the margins.

Tin and gold is a most excellent combination, and except for the color, would be preferable to soft gold in most cases. By laying one-third of a sheet of soft gold upon the same quantity of tin foil, and twisting the two into a rope, moderately tight, it is ready for use. It is easily worked and can be used whenever soft gold could be used, excepting where it will show. It becomes very hard after a time, and the tin and gold seem to unite. The only disadvantage is its color, for it will turn dark, and sometimes look very much like an amalgam filling, but it does not discolor the teeth as does amalgam. It is a time saver to the dentist, and a nerve saver to the patient, for a tin and gold filling can generally be inserted in one-fourth the time required for cohesive gold, and often as quickly as amalgam.

Cohesive gold is the standby for certain work, especially where the teeth are very frail, and would not withstand the pressure necessary to put in soft gold, or tin and gold. I have many cases of very frail teeth, filled with cohesive gold extensively contoured, which have been in from six to eight years and are still in good order, while at the time of filling it seemed as though nothing but cement could be used. As to amalgam, I could not do without it. I use it in the back teeth more than anything else, but it is generally because most of my patients (living as I do in a small place) are not able to pay for large gold fillings. It makes a most excellent filling, when worked dry and burnished against the sides of the cavity with force. I believe amalgam in a crown cavity, well put in, will in most cases, last as well as gold, but it does not do so well for approximal cavities.

From the investigations of Dr. J. Leon Williams, of London, we are to believe that caries is caused by micro-organisms agglutinated together forming a film over the part of the tooth which favor lodgment and protection from outside interference. These micro-organisms excrete an acid, which dissolves the cement that holds the enamel rods together, and finally ends in the solution of the rods themselves. These micro-organisms

according to Black will attack a tooth with poor enamel no more readily than one with good enamel, and if I am not mistaken, says what we term a soft tooth, can be filled with gold as well as one that is hard, and I believe that in a great many cases this is true.

Cataphoresis.

By DR. J. W. CLARK, Louisville, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

My outfit consists of a Wilms Current Controller or Rheostat, with twenty La Clede cells, of which I have cut one down to sixteen giving me as high a voltage as I think is necessary, about twenty-four volts.

The standard unit for measuring electrical pressure is called a volt. The milliampere meter records the flow of the current through the tooth, or measures the strength of it. The resistance is measured by a standard called ohms. An adjustable resistance is called a rheostat, or current controller, by which the operator can regulate the pressure to a fraction of a volt.

Treatment of teeth will vary, in the same mouth, in proportion to the size of the cavities. A small cavity, or exposure of dentine, is like a small wire: it offers more resistance than a larger cavity or wire; no more current can flow than can pass through the exposed tubuli, and the current will increase in proportion to the size of your cavity.

The first essential is to have the tooth or teeth perfectly insulated; without this precaution there is no certainty as to the flow of the current; if the solution should flow over, on to the soft tissues, they offering the least resistance, the current would partly or entirely pass through them.

In measuring current strength, from one to one and one-half milliampere will anæsthetize a sensitive tooth in almost every case. For general use, I do not think it necessary to have a milliampere meter. The patient is the best meter. After the electrodes are placed, the switch of the current controller should be turned slowly until you notice a slight twitch of the eyelids. This is always noticed from the first impact of current; rest about a minute, and carry a little farther; never increase so rapidly as to produce pain.

In operating to remove pulps, if you find you can not increase your

voltage rapidly after ten or twelve minutes, enlarge the cavity and cut as near the pulp as possible, as you may have partial anaesthesia, then make second application. As the cocaine becomes effective, the sensation will gradually subside; increase the voltage gradually until you observe that a radical change in the pressure produces no sensation. You can then readily extract the pulp without pain. For good results always make a fresh solution of cocaine.

**The Use of
Cataphoresis
in Pyorrhea.**

In the treatment of pyorrhea, in order to remove the deposits that are well up and the gums, on the roots of the teeth, I have a copper blade made of wire 16 gauge. I wrap a few shreds of cotton around to hold solution of cocaine, and carry that well up under the gum around the tooth or teeth. I use a pressure of ten to fifteen volts. Each tooth may require two or three minutes. By this method you will find to your delight that you can chisel and scrape away the deposit to the end of the root, if necessary, without any perceptible pain to your patient.

I wash out the pockets with water as hot as patient can endure, after which I sterilize well with pyrozone three per cent., wrapping larger quantity of cotton around blade; thoroughly sterilize the pocket, then take copper blade, dip into full strength sulphuric acid, carry the blade down as far as it will go, aim to touch all exposed portion of root. Make two or three applications on each tooth while treating. The copper blade being readily acted upon at the anode by the sulphide of copper that is set free, of itself has beneficial therapeutic action.

In making these applications, as you use a much higher voltage, care should be observed to give no disagreeable shock by breaking contact when at high voltage.

It would be best not to treat more than two or three teeth at a time, as they will be sore for a few days. If thoroughly done, it will not require more than two applications.

**Cataphoretic
Sterilization
of Root-Canals.**

I have experimented with nitrate of silver in sterilizing root-canals; especially those that were too small to admit a branch, and those that were tortuous. If these root-canals can be lined thoroughly with the nitrate, and also the tubuli somewhat penetrated, there should be no possibility of subsequent trouble.

I will pass around a few teeth upon which I have experimented out of the mouth. The applications to these teeth were three minutes each. You will see that the tubuli have been thoroughly permeated, and the canals lined to the apex.

**Bleaching
by
Cataphoresis.**

In bleaching I have used the three, five and twenty-five per cent. pyrozone cataphoretically. I think my best results show from the twenty-five per cent. solution, although I have had good results from the five per cent.

The pyrozone must first be converted into an aqueous solution, the ethereal solutions being poor conductors. In opening the glass tube containing the solution, I wrap the tube in a wet towel, take large shears or pair of wire clippers and cut off the end readily. Pour contents into a glass stoppered bottle. Pour portion of the solution into a saucer, add equal parts of distilled water, or one part electrozone is better. The evaporation of the ether may be hastened by cautiously applying heat. Have the tooth perfectly insulated and cleansed of all decay, and the root-canals filled with gutta percha. Wrap a pledget of cotton around platinum electrode point, dip in solution and carry into the tooth.

The current can be increased rapidly up to twenty to twenty-four volts. When I think necessary to take fresh supply of pyrozone, I switch off the current and dip needle in solution.

The time required for bleaching varies according to the density of the discoloration, from thirty to fifty minutes. After six months, the color remains unchanged in my cases.

An Anatomical Denture.

By HENRY PIRTLE, D.D.S., Louisville, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

My observation of the artificial dentures in the mouths of persons with whom I come in contact, has led me to conclude that there is not attention enough given to the arrangement and shade of the teeth. I have reference of course to full dentures.

In preparing an artificial substitute the first thing necessary is to obtain as near as possible a perfect impression.

Some operators contend that plaster of Paris is the only material suitable with which to take an impression, while others think modeling compound is best. I am somewhat broad in my views, and think it best

to not adhere to any one material, but to be governed entirely by the case in hand, as the conditions presented in one mouth may be considerably different from those in another.

I have found, where the ridge is slightly soft and the palate hard, that modeling compound gives the best impression.

Having secured a suitable impression, the next requisite is the proper occlusion of the models. There are quite a number of ways to obtain an articulation, but the method I prefer is to make trial plates and so trim them as to get the proper expression of the lips, that I may form some idea as to how to contour the plates.

Having obtained the bite, the selection of the shade of the teeth is very essential. I have so often noticed a shade of teeth in a mouth that was entirely different from what the natural organs had been, showing immediately that they were artificial. I endeavor to copy nature in the shades of teeth.

Having obtained the articulation and shade of the teeth, I set them up in wax, try them in the mouth, and note the expression. If any alteration is necessary, it is easily accomplished.

I think we should endeavor to make our artificial dentures so natural in appearance that they will not be easily detected. Unless the patient has an extremely short lip and will be apt to show the rubber, plain teeth are the more suitable, because of their range of adjustment.

The teeth sold in the dental depots, as celluloid teeth, are the most natural in appearance. Another advantage of plain teeth is that they make stronger plates, and should a tooth become broken, it is more readily replaced.

One case will present itself where a better expression may be obtained by setting the teeth perfectly straight, while another will appear better with a little irregularity.

In cases where the lower jaw is very much protruded, the anterior teeth should be set to occlude on their cutting edges. If the attempt be made to set them otherwise, a tilting of the plates is sure to result, besides causing an extension of the lip.

I have very frequently noticed sets of teeth with the bicuspid and molars occluding on their outer cusps only. Such an articulation is very unsatisfactory for mastication.

I prefer to make my plates of black rubber with pink rubber gums. On account of a less quantity of earthy substances and coloring matter in the black rubber, there is less inflammation of the mucous membrane, besides being cleaner in the mouth than red rubber and celluloid. It also, I think, makes a much stronger plate.

When it is difficult to get the lower plate to stay in place, I have

found that the building out of the rubber opposite the second bicuspid and molars and finishing with a ground upper surface, to be quite an assistance. The object of the grooved portion is to allow the muscles of the cheek to fold over into it and assist in the retention of the plate.

Dental Remedies.

By DR. C. G. EDWARDS, Louisville, Ky.

Read before the Kentucky State Dental Association, June 16, 1897.

In the classification of remedies, it is difficult to arrange them completely, according to their action on the principal functions.

Of the various groups of medicines, I shall only treat of those which, we as dentists, are the more directly and practically interested in.

Ergot. Ergot, by reflex action, produces active contraction of involuntary muscle fiber; it therefore acts on and contracts the smaller blood vessels, and its administration is indicated in persistent hemorrhage from the gums, and alveolar hemorrhage after extraction.

Cannabis Ind. Cannabis Indica is like opium; in large doses, a narcotic poison, its effect is anodyne. As a topical remedy for preventing pain in extraction, I have used it for more than ten years with very gratifying results in many cases; its action, however, is not entirely reliable. It may be applied on pads of cotton to the gum on each side of the tooth for five minutes before operating; in all cases the gum should be dried before making the application.

Eucaine. The public attention which has been attracted by cocaine renders it unnecessary for me to notice it here except by comparison with a new and rival substance called eucaine. While cocaine is an alkaloid of the leaves of coca, eucaine is an artificial or chemical product. There is no chemical difference between the two substances, the only important physiological and therapeutic action being the difference in their toxic effect. I have used eucaine for more than six months, and have extracted more teeth in that time than I had for several years previously. I extracted nine and eleven teeth, respectively, for two patients at one sitting, using two syringes full on each subject, one a lady of highly nervous temperament and light

weight. The strength of the solution was five per cent. No unpleasant or toxic effect was noticed, and no complaint was expressed by the patient.

Another advantage which eucaine possesses over cocaine, is the more permanence of the solution, and while cocaine is decomposed by boiling the solution for sterilization, eucaine is not. I have kept a solution of the latter for two months and found it as energetic as when freshly made, though in every instance I boil it before using. In reading very many recent reports, from the pen of general and dental surgeons, I find expressed a universal and positive opinion in favor of eucaine, as to its equal efficiency in pain obtunding power, and its very decided freedom from the toxic effects so frequently occurring with cocaine. The only unpleasant effect so far noticed, is swelling or puffing of the tissues, in some cases, the swelling extending to the cheek or lip; this is unaccompanied by pain or inflammation, and subsides in twenty-four hours.

Aconite is one of the most valuable of known agents in controlling inflammation, as it lessens the force and frequency of the heart pulsation, lowers arterial pressure, reduces the temperature, and stimulates intestinal, cutaneous and urinary secretions. In pericementitis, and in the early stage of alveolar abscess, especially when attended with high temperature, it is a valuable remedy administered internally until its physiological effects are exhibited. Watchful care must be observed in the administration of such a powerful depressant remedy.

Aconite, in conjunction with other remedies, notably iodine, is a well known topical remedy for pericementitis.

Opium, a narcotic poison in large doses, and an anodyne, is unrivalled for relief of pain, and is a powerful abortor of inflammation. There is absolutely no remedy equal to it to relieve pain and induce sleep; by this action it controls nervous and vascular irritability. Opium also has sedative power when locally applied, as well as when internally administered.

Quite recently a preparation from opium has been introduced, called papine. It is said to have all the anodyne properties of opium, with the narcotic and convulsive elements eliminated, one fluid ounce being equal to one-eighth grain of morphia.

Many new remedies for the relief of pain have been brought out, notably those derived from coal tar, salol, codeine, phenacetine and ammonol being some of the principal ones, all of which possess sedative and pain obtund-

ing properties, and probably curative effects. Ammonol in ten grain doses, repeated if necessary in an hour or two, has gained considerable favor for the relief of pain in pericementitis, and alveolar abscess; curative properties are ascribed to it by some practitioners. If such is the case, it must stimulate and promote the secretions, especially the lymphatic glands.

There is another group of remedies, classed as **Potass. Iodide.** alteratives; agents that produce waste of tissue, destructive metamorphosis. Their function is to modify morbid processes and aid in removal of abnormal deposits by stimulating certain organs and glands to increased activity. These include the salts of potassium, sodium, lithium, ammonium, and mercury. I have used potassium iodide as an alterative in the treatment of pyorrhea alveolaris with very gratifying results, continuing the treatment for weeks after the surgical and local treatment was finished. Potassium salts are diuretic and antacid, and are used especially in the treatment of diseases supposed to be due to insufficient oxidation of the blood-products, or to deficient excretion.

Lithium. Lithium carbonate and lithium citrate have become popular in the systemic and local treatment of pyorrhea alveolaris, as well as other affections supposed to be the result of deposits of the urates in the affected tissue, which is the case in the gouty diathesis.

Mercury. Mercury has long been employed not only as an alterative, but as a purgative in catarrhal conditions of the intestinal mucous membrane. It is a reliable purgative, and this therapeutic action is often desirable in threatened alveolar abscess. Its action on the liver, with its well known stimulant action on the lymphatic glands, augmenting their elimination of efete products of inflammation, is a very important factor in controlling the disease, and hastening its termination by resolution.

If dentistry is a specialty of medicine, there can not exist a defined line dividing the practice. They must merge one into the other, lapping and dovetailing here and there; therefore, we should be fully equipped with a knowledge, not only of the fundamental principles of medicine, but that science which treats of morbid anatomy and physiology, and the application of remedies for relief. There never was a more active period than the present, when the chemist exerted so much energy and intelligence in producing new remedies for the cure of disease and the relief of pain, and in compounding the old and the new into new and convenient forms for administration.



Stomatological Club, San Francisco, Cal.

Reported by CLYDE PAYNE, D D.S., San Francisco.

The regular meeting of the Stomatological Club was held on Tuesday evening, May 18th. President Dr. Russell H. Cool in the chair. In the afternoon, Dr. F. L. Platt gave a clinic on the preparation of cavities with the use of cataphoresis. The following discussion ensued:

Dr. F. L. Platt. In my clinic I used an apparatus that I find very satisfactory. It is the Cataphoric appliance made by the Dental Protective Supply Co., and uses the 110 volt direct current. It is claimed positively that no excess of current can pass through the apparatus.

In case the supply current becomes greater than 110 volts, resistance is so arranged that it will be burnt out and no greater amount can pass through the machine than is registered by the switchboard. There is danger where a fountain cuspidor is used, as the water in the pipe makes an excellent ground for the current. I have had no difficulty with the apparatus. We did not have quite time to complete the operation on last Tuesday. I took a cavity that was not deeply decayed and the tooth quite good. There was a good deal of dentine over the surface of the pulp. In twenty minutes the patient had turned on six volts and I excavated the cavity without pain. In attempting to make undercuts, I found some sensitiveness and again applied the current for fifteen minutes and then almost entirely completed shaping the cavity, when the patient had to leave. The cocaine I used was the ordinary muriate, in crystals. I used it by allowing the crystals to dissolve on moistened cotton.

I am in possession of one of the same instruments, and so far have been successful in removing pulps and excavating sensitive dentine. I would not advise its use in extracting, as there is great danger in using 20 per cent. and 25 per cent. solutions of cocaine. I do not believe in the 8 per cent.

solution, which is claimed to be very efficacious. One thing must be guarded against in using this apparatus, and that is turning on the extra volts before turning back the lever under the control of the patient. I find most success by using a broad point. I am now making a small brush out of the finest platinum wire. The idea is, to place it in the cavity, placing a piece of cotton saturated in saline solution of pure crystals of cocaine muriate, distributing the wire well over the surface of exposed dentine. I believe we can get better results, and have more complete control of the current by having a wider electro pad covered with lint, saturated with a saline solution and placed on the nape of the neck.

The doctor gave a very pretty demonstration of
Dr. Russell H. Cool. the use of this instrument last Tuesday, and as we have had considerable discussion in favor of cataphoresis, I am inclined to make a protest. I think that in most cases, which I have seen within these rooms, the same results could be obtained with less pain and also more rapidly by use of other means than cataphoresis. The preparation which Dr. Clyde Payne introduced, chloride potassium, carbolic acid, cocaine and glycerine acts as an obturdent to the dentine and permits the removal of the greater portion of the dentine without pain.

I have the chloride of silver apparatus and find
Dr. Clyde S. Payne. in many cases it is just exactly the thing to use and seemingly is the only thing to thoroughly obturd sensitive dentine, but where I use cataphoresis in extreme cases, I use chloride potassium, carbolic acid, cocaine and glycerine—in nearly every operation. First dry the cavity with alcohol, place in obturdent and use hot air syringe and you get a thorough effect. If the profession would try this obturdent, they would find it works splendidly in almost every case.





A Simple Appliance for Moving Single Teeth.

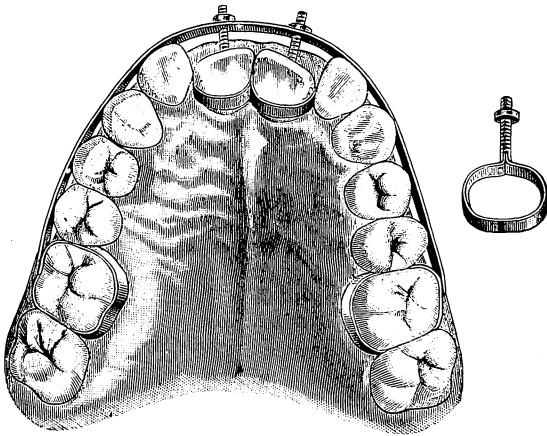
By O. W. BEDELL, M.D., D.M.D., St. Louis, Mo.

No matter how much we allow for complications, difficulties and accidents, I am convinced that in the majority of cases for regulating, the operator is disappointed in not getting just what was originally planned, without consuming more time and having more trouble than was at first anticipated, especially in those cases of irregularity of the simplest class, where but one or two teeth are out of alignment, the remainder of the teeth in the same jaw, and the relation of the two jaws to one another being practically normal; those which look so simple and easy that no special apparatus is arranged for, and considerable difficulty is encountered. After meeting with a number of such cases, where some one or two of the superior anterior teeth were retracted out of line so as to interlock, closing behind the cutting edges of the inferior anterior teeth in occluding the jaws, and frequently being disappointed with results obtained with jack screws, rubber bands and ligatures, I tried the following little appliance with most satisfactory results:—

A band is made for either the second bicuspid or first molars, depending on the number of teeth to be moved, and the relative amount of force necessary to accomplish the movement. These bands are made of German silver or other suitable material, and either have adjusting nuts or made to measure as a driving fit. A large size wire 8, 10 or 12 gauge, depending on the strength required, is then flattened by passing through the rolls until sufficiently thin to make a neat appliance, but still not so thin as to bend or spring too easily. This is then formed into an ideal arch extending from the bands on either side of the mouth and soldered securely to them. Holes are then drilled in the band exactly in front of the teeth to be moved, these openings being sufficiently large to allow the passage of a small sized threaded wire. The teeth to be moved are banded with thin banding material, allowing the two ends to project towards the front, these ends being

pressed tightly together by means of pliers. A short piece of threaded wire is split with a fine saw far enough to take in the projecting ends of the band. A perfect adjustment is made and the parts soldered, care being taken not to allow the band to extend beyond the edges of the threaded wire so as to prevent a nut being turned down against the band.

These bands with projecting threaded wires are firmly cemented to the teeth to be moved, the wires passed through the opening in the heavy arch band, and the entire appliance cemented in position. A nut is then turned down over the projecting ends until it rests tightly against the arched band, and all the surplus is cut away. The patients are supplied



with a wrench and instructed to turn the nut up as fast as the tooth will move without soreness or discomfort, until the correct position is obtained, and to call occasionally to have the surplus of wire, which would project beyond the nut and irritate the lip, cut away.

Rotation on the axis of the tooth may also be arranged for when required, by simply cementing the bands to the teeth to be moved in such a way that the attached threaded wire comes closest to the edge requiring the most movement.

These little appliances have given splendid results in several cases; one being a case in which five teeth were moved forward fully a quarter of an inch, and all at the same time. The advantages which I have found, have been freedom from the pain and discomfort usually accompanying the use of rubber bands or ligatures; the firmness and accuracy with which the tooth could be moved, and the slight trouble to operator as the patients did most of the regulating themselves.



Office of Dr. C. J. B. Stephens,
Great Falls, Montana.

It is a pleasure for those who can, to enter the offices of others in the profession and examine the convenient arrangements and appliances, some of which are original inventions, well-suited to the peculiar circumstances and conditions which surround them. But all do not have that privilege and would be only too glad to learn from our journals such arrangements as will minimize labor, save time for the busy dentist, and his patients, and diminish their discomforts.

With this thought in view, I will briefly describe our office and appliances, some of which are of our own design.

Here in Montana, although the country is not thickly populated, one must be well up with the times, as Westerners are among the first to grasp new ideas and utilize them, and as there is a brisk competition.

Our offices, situated on the second floor, comprise a reception room, two operating rooms, laboratory, extracting room, desk, retiring, and store rooms. The first four mentioned are facing the avenue and are lighted by extra large windows, admitting northern light; all except the retiring and store rooms open into the main hall of the building, thereby affording the best of ventilation and convenience.

To the right and off from the reception room is my own operating room, $11\frac{1}{2} \times 15$ feet, and is lighted by two adjoining windows immediately in front of the chair. Here we have a suspension engine with water motor, controlled by a speed regulator and reversing attachment operated by the foot.

At the right of the chair and dental cabinet, is a wall cabinet of my own design, fitted out with cut down window shade rollers, thereby utilizing their springs; to the rollers are fitted metal trimmings for connections and for charging the rollers; these rollers carry the cords attached to the several appliances, such as miniature lights, cautery, plugger, head-light, etc., (the head-light only to be appreciated from use), and are connected and operated by a switch and battery.



This cabinet also contains a cataphoresis outfit, which by use of the switch is also operated from the same battery, and all are so arranged that only those in use are charged at the time. To use an instrument I simply throw the switch, and carry the instrument to the chair. When done, it winds itself out of the way, on the roller, and hangs in its place inside the cabinet, which is closed by a sliding front. Underneath this cabinet is a compressed air apparatus, the syringe of which is heated by electricity, through a curling-iron heater which serves every purpose.

Close by is a Crooke's tube stand of my own designing, a plumber making the base of gas pipe, and a carpenter doing the rest. By use of thumb-screws the tube can be held in any position and when placed at the chair, it is connected with the induction coil by wires, with rings for easy connection, which are suspended from the ceiling and out of the way.

Farther to the right is a wall cabinet containing a supply of drugs, and directly under it is a place occupied by the X-ray induction coil,

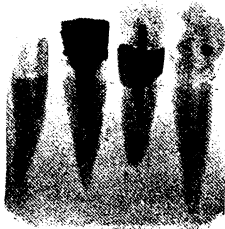


Fig. 1.

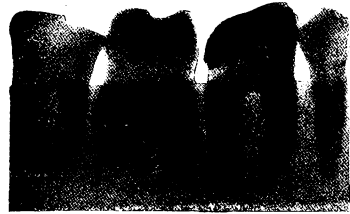


Fig. 2.

which was swung out of place by the photographer. I may say here that there are conditions in dentistry which may be positively diagnosed by use of the X-ray, which could be known by no other means, except by sacrificing the teeth.

Fig. 1 shows a broken broach passed through the apex of the root, also crowns and filling. Fig. 2 shows a well defined exostosis of the second molar.

At the left of the chair is a large book-case containing literature on dentistry and medicine, and at the right of the door, as you enter this room, is a large wardrobe with the doors removed and the lower third shelved for books and the upper part fitted out with a mirror. All is neatly draped and serves not only as a book-case but for laying aside wraps.

Passing from this room we enter a room 21 x 22 feet which is divided into desk-room, laboratory and operating room by a high and finished partition with frosted glass. This operating room also contains electrical



appliances, ball-bearing engine, etc., and is occupied by Dr. G. H. Chase, who is a genius, as well as a first-class general practitioner.

Between the two operating rooms is seen a reservoir with faucet for water, that is heated by gas from the laboratory, which is situated between the operating rooms, and is therefore convenient to both.

For those who are so unfortunate as not to be in a city with a gas plant, I will describe a small plant of our own, one that we have used for three years or more, and that meets every requirement. I read of pumping air through gasoline, and storing the gas in a kerosene can, to be used for waxing. Thinking this might work on a larger plan, I had made of galvanized iron a gasometer of one hundred gallons capacity. By piping the office and connecting to the gasometer, also connecting to it the carburettor, we are able to manufacture gas and store it, to be used when needed, to operate the blow-pipe independently, or use the blow-pipe and store gas at the same time, all at a very small cost.

A good anvil is made by having a six inch cube of iron cast; then make a box about two feet long, with one end closed, and just large enough at the other end to admit the cube; stand it on end and fill nearly full with sawdust, then place in your cube and you will no more be annoyed with the ringing sound and jar, while swageing.

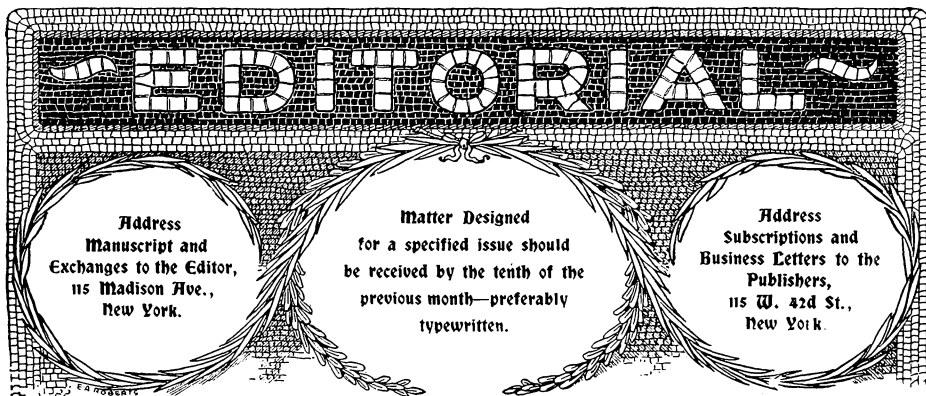
To return to the arrangement of my office, leading back from the desk-room and through a hall, is a room, 14 x 14 feet, well lighted, which makes a good extracting room. It is large enough to admit several persons during an operation and have plenty of room for the gas apparatus, electric appliances, cabinet, wardrobe, etc.

Off from the hall leading to this room, aside to the left, is the retiring room, 6 x 6, furnished with lounge and chairs, and directly opposite is a good sized store room where such paraphernalia as is used by the janitor is kept.

The office is heated by steam, lighted with electricity and is furnished with water and bowls where needed.

One thing more I might mention. Perhaps it has already been noticed that my cabinets are open and drawers are drawn. I do not believe that with the modern appliances and the advancement in operative dentistry, there is that fear among the more intelligent class, that formerly existed. I do not hide my instruments, nor am I ashamed of their appearance, but have them in easy reach, every one in its place, and all are put to good use.

It is not an uncommon occurrence to have patients remark about being in some other office and seeing nothing to work with, and that they prefer to have their dentistry done where there are good appliances, believing that their work would be done better, more easily, and in one-half the time.



Faculties versus Examiners.

A conflict impends, or seems impending, between the National Association of Dental Examiners, and the National Association of Dental Faculties. The situation in brief is as follows: The Examiners, have from time to time, in yearly sessions passed resolutions explanatory of the terms upon which colleges would receive recognition as reputable. No objections have been openly made to the formulation of these rules. Since the last annual meeting, however, these old rules have been codified and forwarded to the colleges seeking recognition, with the result that in the May number of the *Cosmos*, there appeared an editorial bitterly inveighing against this usurpation of power. Thus it is the *inforcement* of the rules, rather than the rules themselves, which seem to be objectionable.

That the rigid enforcement of these rules was not intended by the committee which codified them, is fairly presumable from the evidence contained in a letter from one of its members, addressed to a prominent member of a State Board. The writer says: "There is no doubt in my mind, but that there will need to be a number of modifications in the rules adopted by the National Association at its last meeting, etc." As this letter was dated March 23, 1897, it is evident that before the appearance of the May number of the *Cosmos*, the committee had already concluded that the rules were not such as should be enforced stringently, and we should therefore believe their statement, that these old rules were codified

and forwarded to the colleges with the purpose that the replies and criticisms of the colleges would enable the committee to report, at its next meeting, as to the modifications which would be advisable.

This editorial in the *Cosmos* has been followed by one in a similar strain in the *Practitioner* for July. Thus two college deans, being editors, have addressed the profession editorially upon this subject, and it would seem, therefore, pertinent for an editor, who is affiliated with neither college nor examining board, to review this subject from the vantage ground of an impartial standpoint.

**The
Parties
in Interest.**

It is a common contention, that "there are two sides to every question," and these editor-deans have written apparently with the idea that the two sides to this question may be represented by advocates of the Faculties and the Examiners. But curiously enough the impartial observer discovers that there are actually five aspects of the problem. The parties in interest are the general community, the dental profession, the dental students, the dental faculties, and finally the dental examiners. Moreover, they are here placed in the order of their just precedence. The general public, granting special favors and special fees to professional men, and special immunities to educational institutions have the right to demand the highest skill in their service, and the thorough training of students by the institutions. The dental profession has the right to exact a standard of education on a par with the high position to which graduates have brought the profession since their graduation. It should be remembered in this connection that colleges teach formulated knowledge; they do not create any knowledge: that high function devolves upon the practitioners, and these latter have a right to inspect the qualifications of those who set up in competition with them. The student attends a college, pays its fees, and has a right to demand an education which will enable him to practice his profession. If an obstacle to such desire appears in the form of a State examination, he should be prepared by his college to meet and surmount the obstacle. The dental faculties, as a body of learned men, unselfishly imparting knowledge to those who have it not, are entitled to the countenance and encouragement of the community and of the dental profession, but they cease to deserve commendation whenever they fail in their obligations to

their students, the profession, or the community. The dental examiners are the executive committees of the States, clothed with authority to guard the rights of their communities against the practices of the incompetent. So long as they aim to fulfil this duty, they are entitled to respect, and any disrespect to them is antagonism to law itself.

**The
Legal Power of
Examiners.**

At this point it may be pertinent to consider the contention of the editor of the *Cosmos* to the effect that the Examiners have transcended their legal authority. When the National Board of Examiners formulates a set of rules, under which colleges are to receive recognition as reputable by the several State boards, he claims that this body commits an illegal act, or at least an act which it has no power to enforce. In part his language is: "No National Organization, chartered or otherwise, can under the constitution of the United States be vested with authority or jurisdiction over matters coming within the sovereignty of the several States in the exercise of their police powers."

This is of course true, but does it apply to the case in point? An analysis may be instructive. Much depends upon the integral composition or membership of the national organization. A national convention of Sabbatarians could not meet and pass a law restricting the conduct of citizens in several States; or if they did and appointed members under orders of the convention should endeavor to enforce such laws, unquestionably such individuals would be arrested and could be punished as misdemeanants. In similar fashion we might stretch the example and claim that a self constituted National Association of Dental Faculties has no right to enforce rules of its own, which interfere with the conduct of institutions of learning chartered by State Legislatures. This the National Association of Dental Faculties seems to do when it enforces its own rule that no dental school shall be recognized by it until it has been in existence for two years. Least there be any doubt that this is an interference with the conduct of the legally existing though unrecognized school, attention need only be called to the fact that a new dental school finds a great obstacle in its way of procuring students, during the first years of its existence, because in these days students will not pay for tuition in schools not recognized by the Faculties Association. Thus the rules operate somewhat towards the creation of a College Trust, and only

those colleges which have the means of subsisting for two years, with a slim attendance of students, may be finally recognized. It would be interesting to have the editor of the *Practitioner*, explain why he so patiently submitted to the domination of the Faculties Association, which it is said compelled the withdrawal of an honorary degree from one of his faculty, and yet finds the similar action of the Examiners so burdensome. And when the editor of the *Cosmos* writes that, "It is perfectly competent for a State to determine its own standard of qualification and of reputability, but no national body can do so without interference with the constitutional right of the State, and such interference is illegal," he should go on to explain in what manner it is more illegal for the Examiners to erect a standard of reputability for colleges, than for the Faculties Association to enact and enforce similar rules?

But as a matter of fact, the law quoted, though sound, does not apply with any force whatever to the Examiners Association, which is a unique body. There is an axiom in mathematics, which is equally applicable here, to the effect that "The whole is equal to all its parts." The Examiners Association is made up solely of members of legally elected or appointed State Examining boards. Thus each member represents executive power in his own State, and may enforce rules of the National Organization of which he is a part, because when he attempts to do so he is within his legal sphere of action. More plainly, the National Board as a whole, needs no power to execute its orders, because there is no National territory within which the laws are to be enforced. Though it is now possible that it does have this power because it holds its charter in the only district which is National territory, and in which there are dental schools. But the chief sphere of its action is in the States, and here no State's rights are attacked because those who execute its orders, when executing them, are acting as officers of the State.

That we should have any State Examining Boards, as they are now constituted, is to be regretted; that they should have come into existence from necessity, is to be deplored; that the necessity for their continuance still exists, is almost a disgrace.

We may first discuss the objections to the Boards.

Tersely stated, examining boards were first organized with a view to

the improvement of the status of reputable dentists. It may be readily proven that they have, *per contra*, worked actual injury to the profession at large in this country, and to the reputation of American dentistry abroad. The first of these claims was discussed editorially in our last issue, when the argument was made that by announcing to the public that all men practicing dentistry are legally qualified, it has become possible for quacks to flourish, and for non-professional men to practice dentistry, by hiring graduates to work for them. Thus, in New York City and in Chicago, the once dignified profession of dentistry, has sunk to the level of a department in a dry goods emporium. This is the logical result of the laws which have been placed upon the statute books at the instigation of the dentists themselves. It is too late now to cry over this error. The fashion for dental legislation, and the vicious demand for examining boards, has settled upon the country permanently. It behooves the boards, however, to mitigate the evil of their own existence by showing no favor in their examinations, and by making their standards so high that the would-be charlatan could not become legalized if he would. Let the examiners remember that every incompetent passed, whether he be a graduate or not, is one more man in competition with ourselves, taking the bread out of our mouths, while they do inestimable damage in the mouths of the community, which latter the examiners have sworn to protect.

Our system of dental examining boards has injured the fame of American dentistry in foreign lands, because when the graduate of even our best colleges asks permission to practice in Europe, the European says with justice: "You could not practice on that diploma in your own country, and perhaps not even in your own State! How can you expect recognition from us?" The time was when the American dental diploma was a passport the world over. Now we cannot even cross from one State to the other with it. This is also chargeable to the examining boards.

But!

The existence of examining boards is directly traceable to the colleges. Had these institutions upheld the standards of our profession; had college graduates been universally fitted to practice in any community, then all communities would have received them without question.

But when men could show diplomas from colleges claiming to be reputable, who were not fitted to practice in any community, it is not strange that at last rebellion was engendered. It is deplorable that the remedy applied was not only inefficacious, but actually mischievous. Boards should never have been created with power to examine college graduates. These men were innocent. The boards should have been empowered to examine into the conduct of the colleges, which, holding their charters from the State, should have been held strictly to an accounting by the State. The editor of the *Cosmos* thinks it a usurpation of the Examiners to attempt a supervision of the colleges. He may be right. But the sooner the Boards are clothed with the power of supervision over the colleges, and the sooner they are deprived of the right of examining college graduates, the sooner will the mischief of the present state of affairs be rectified.

It is contended by some that the standards in the colleges are now more elevated; perhaps so, but the dental college man must be elevated yet much higher before the dental graduate can hope to be the peer of his medical *confrere*. The preliminary education exacted is insufficient, if we may judge by the gross ignorance of the English language displayed in letters and essays from dentists which reach this office; or if we estimate from such evidence as is presented by Dr. Carleton Brown in his article in this number. The New Jersey Examining Board has just concluded an examination of applicants for license to practice, at which the writer was invited to be present. A careful and critical investigation of the methods of this Board proves most conclusively that it is endeavoring to fulfil its duties righteously, and that the attempt is fairly successful. At a later time a critical review of Board methods will be undertaken. For the purpose of the present occasion it will suffice to quote a few gems discovered among the papers of this last lot of applicants.

Q. Name two origins of irregularities?

A. Sucking thumb and tongue.

Q. Name some of the causes of the first.

A. Sucking thumb.

Q. Name some of the causes of the second.

A. Sucking tongue.

Here is a new field for the study of the etiology of irregularities

which may be commended to Dr. Talbot. A second applicant also has a sucking mania. Here is his evidence of qualification.

Q. What are succedaneous teeth?

A. Succedaneous teeth are teeth which are formed in children due to sucking of the thumb.

Finally, here are some choice specimens of knowledge as it is pumped into an uneducated recipient, and as it finds expression when he vomits it forth.

Q. Through what canal does the superior maxillary nerve pass?

A. Infundibulum.

Q. Where does the inferior dental nerve leave the cranium?

A. Mental foramen.

Q. What is the object of absorption?

A. To transmit fat from the alimentary canal into the lymphatics.

Q. What is secondary dentine?

A. The permanent set.

Another graduate in answer to this question explains that secondary dentine is "The cause of the formation of the permanent teeth." Twenty-nine men applied for examination, of whom twenty-six were graduates. As an evidence of some knowledge of prosthetic dentistry, the candidates were required to bring a full set of teeth invested, ready for soldering, and to solder the teeth to the plate in the presence of the examiner. Not one of these twenty-nine men, twenty-six of whom were graduates, had invested their pieces so that there was any possibility, with the facilities at hand, to properly heat up the invested piece prior to throwing the flame of the blowpipe upon the solder. In fact a hot furnace fire would have been requisite. All had from three to ten times as much investment as there should have been. This is not a lack of preliminary education, but is an evidence of poor training in the schools. It will be requisite for the colleges to do much better than the records of their graduates show in the archives of the New Jersey Commission, before they may expect the profession at large to have full faith either in their claims or their methods.

**An
Immediate Remedy
Suggested.**

All aspects of the question have now been touched upon, however inadequately, except from the view point of the student, and when we look through his spectacles, we discover an injustice done him.

which should be rectified, and which can at once be remedied, if the Faculties and the Examiners will co-operate to that end.

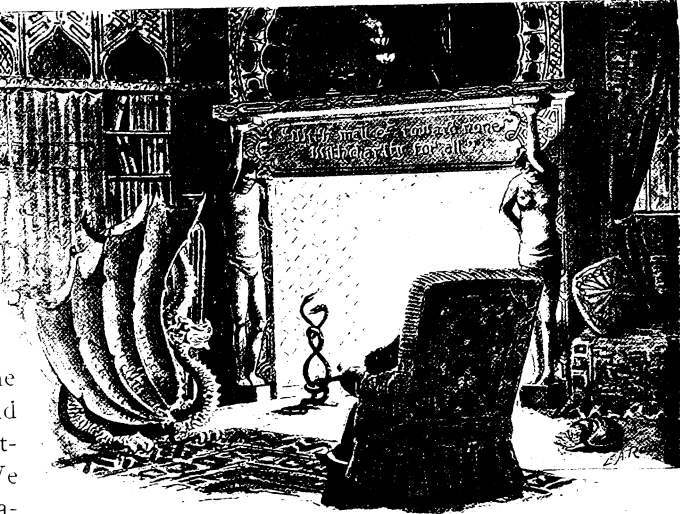
Let us suppose that a student elects to obtain his education in a school indorsed by the Faculties and by the Examiners. He pays his fees, attends lectures, faithfully performs all duties assigned to him, passes his examination, and receives his diploma. Then he selects a State in which to practice and essays to pass the State Board. Here he is examined by men, who, though honest, are ignorant of the methods by which he has been taught, and the questions propounded are based upon authorities differing from those upon which he has been led to rely, so that the result is, that he fails. In impolite, but expressive language he has a right to feel that he has been swindled, and the swindlers are the Examiners as well as the Faculties, both bodies having indorsed the school which taught him.

The following plan seems to offer a just settlement of this problem. Let the Faculties each year prepare one hundred questions on each branch taught in the schools, and present this set of questions to the Examiners, who in turn would transmit copies of the same to all State Boards. Then let the State Boards choose their questions from these lists, which would represent the teaching of the schools. Should the graduate student fail to pass such an examination, no charge of unfairness could hold against the Examiners.

Another plan which might be put in operation separately or in conjunction with the first, would be for the college to return to the graduate his original examination papers, upon which they decide to grant him his diploma. These papers should have some official stamp imprinted on every page, so that they could not be replaced by others. Then, if presented to a State Examining Board, it also might decide to pass him without further examination. At least the State Board would learn in this manner whether the men make as deplorable exhibitions of bad English in their college papers, as they do in State examinations.

The Editor's Corner.

For several months we have been inviting the profession to attend our White Mountain Meeting. We intended it as a va-



cation as well as a scientific feast. At present our magazine reaches fifteen thousand subscribers, and as we wished the other ten thousand dentists (who have not as yet found time to send in their subscription) to have the opportunity of attending our meeting, we mailed twenty-five thousand invitations. Of course, thousands of dentists were unavoidably prevented from joining our party, and we are determined that at least they shall enjoy as much of the meeting as printer's ink will permit.

A Souvenir Edition de Luxe.

The September issue will be devoted exclusively to a report of all that occurred from the time of our departure from New York, until the final adjournment. We hope to make this number something unique in the history of dental journalism. Keeping

prominently in view the fact that we are recording dental progress, the report will, nevertheless, be in the form of a narrative, recounting all the little practical points gathered from conversations in the train, on the hotel piazzas, during the several excursions, as well as the regular programme, including the papers and discussions at the several sessions. Other features will also be introduced which will add to the attractiveness of the report, and make the whole the more interesting.

As hundreds of our readers might like to give this particular number a permanent place in their libraries, keeping it as a souvenir of the first dental meeting held under the auspices of a dental magazine, we have decided to publish a limited *edition de luxe*. This will contain eighty pages of reading matter, profusely illustrated, printed on enameled paper, and bound in cloth, in white and gold. There will be no advertisements in these souvenirs. These books will cost us fifty cents each, at which

price they will be delivered, each in a special box, to all who desire to subscribe for them. As the edition will be limited to those who subscribe, it will be well to notify the publishers immediately, inclosing the amount in cash or stamps, that you wish to be placed on the list of subscribers.

**Why
Copper Amalgam
is in Disrepute.**

A correspondent writes to inquire why copper amalgam, once so popular, is now so much abused. He further says that he cannot understand the terms of condemnation used by recent writers in the journals. The history of copper amalgam is interesting and brings to view an instructive lesson. One year before the copper amalgam "fad" was adopted by American dentists, a certain dental dealer in this city, imported five ounces of copper amalgam, and six months later he had sold one ounce. Then there appeared in a prominent magazine, an indorsement of the material, by one of our leading authorities, a man supposed to have complete knowledge of the subject of bacteriology in relation to dental caries. This savant announced that, whereas other filling materials merely fill the cavities, mechanically preventing the ingress of deleterious matter, copper amalgam deposits an oxide which acts as a germ destroyer, thus inhibiting the further progress of decay. Furthermore, that this oxide would penetrate the dentinal tubuli, rendering the tooth immune in that locality against renewed attacks. Such was the faith of the profession, in the teaching of this man, that copper amalgam became the fashion, and within three months the aforementioned dental goods dealer sold five hundred ounces of copper amalgam in one week.

Nothing which the savant had said in favor of copper amalgam has been disproven. On the contrary, it is still quite believable that the oxide of copper thrown off, does act as a germicide; and it is also true that the oxide penetrates deeply into the tubuli of the dentine. But experience of hundreds of men, in thousands of cases, has shown that not only is copper amalgam utterly unreliable, acting differently in teeth in the same mouth, and with still greater variableness in the mouths of different individuals, but that even where it resists the actions of the oral fluids which seem to cause a more or less continuous wasting away of the filling, the oxide discolours the tooth so badly as to render it extremely unsightly, causing protests from the more exacting of our patients.

Thus copper amalgam has fallen from favor, and the dental goods dealer would perhaps find it as difficult now to sell five ounces, as he did when he first essayed to do so.

The moral of all this is twofold. First: Men who are recognized as authorities, should be especially cautious when promulgating new doctrines, least by some innocent error, they cause vast damage at the

hands of their disciples. Secondly: Practitioners, who desire to follow new methods should proceed carefully, experimenting upon only a few, until by their own experience they discover the merit, if any there be. Should there be none, there will be the less regret, if only a few patients have been made to submit to the experimentation.

**As
Others
See Us.**

The poet claims that it would be well if we could see ourselves "as others see us." Here is at least one opportunity. Recently, there has been considerable friction in medical circles in the Metropolis because of the fact that there are so many hospitals and infirmaries that the practitioner who is "unattached" to the one or the other, has great difficulty in earning a living. An effort was made to correct this alleged evil by legislation, and a bill was passed through both branches of the legislature. But about this time the hospital managers awakened from their lethargy, and hid themselves to Albany, where they succeeded so well, that, to the consternation of the medicos, the Governor vetoed the bill. The news came at a meeting which, in anticipation of the Governor's signing the law, had actually been called to discuss the means by which the hospitals were to be controlled. The report of the Governor's action, caused unpleasant surprise, which gave place to rancorous rage, when a prominent (hospital) surgeon arose and denounced the proposed law, as vicious. Much "language" resulted, nearly all of which appeared on the following day in the newspapers under highly sensational headlines. These newspaper reports brought forth many "letters" pro and con from physicians both attached and unattached. Finally one man, not a physician, sent the following to the *Herald*; it is reprinted here, because the views expressed seem as well fitted to the dentist as to the doctor; what he says of professional educational standards seems to be better said than has been yet recorded from the pen of any dental writer.

"It is an open secret that nearly all the medical practice is superfluous and often injurious—a great hollow pretence that inflates itself in view of physical distress, because the sufferer cannot conjure any defense and is too ill to establish an alibi. This is the main reason why the people go to free institutions. They get their money's worth. The remedy for this condition is a higher standard of education. Make the road to graduation so long and so difficult as to curtail the yearly product full ninety per cent., and a host of evils would be corrected. There are about four thousand physicians in the city, and only about one hundred of them have comfortable incomes.

"I do not mean by a high standard just a mass of acquired knowledge, but an eligibility as to personal appearance that is pleasing, coupled with a tender sympathy that will command encouragement and confidence. So many wavering natures require sentimental and subjective

nourishment. With the whole fraternity so constructed, the general ambition would be so changed that service would not be rendered irrespective of judgment in every case, but the universal object would be to curtail attention, as it requires greater skill to do nothing.

"With government control of colleges, a medical millennium would be realized, as free institutions would then harmonize with the general profession as practical kindergartens for medical expansion. That ancient and silly device, 'Medical Ethics,' a figurative bell punch hung around the neck of every practitioner, will then have outlived its usefulness."

**A New Method
of Polishing
Vulcanite Plates.**

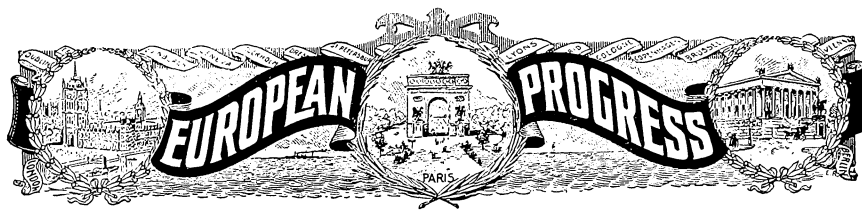
Dr. J. A. Craig, of Macon, Miss., recommends the following method of polishing vulcanite plates. He saturates the cone with chloroform and cuts the plate smooth with pumice. He then uses a soft cloth dipped in spirits of ammonia, rubbing the plate until the surface is hardened and the color restored, the chloroform having a slight bleaching action. Finally he secures his last finish with a very soft cone and soapstone. If the plate should be too thick in the first place he says that it may be rapidly cut down with the chloroform and pumice, and he believes that all who try his method will adopt it permanently.

**New Method
of Banding
Logan Crowns.**

Dr. A. J. Rust, of Chicago, (205 Masonic Temple), describes a unique method of banding a Logan crown. In case further information is desired, the doctor expresses a willingness to supply it by correspondence. He describes his method as follows:

"First, adjust the band to the root, and crown in the ordinary manner. Then with a fine stone remove the glazing from that portion of the crown which is covered by the band, and paint this surface with the prepared gold used in China decorating, and burn it into the porcelain; then re-adjust the band and solder the two together.

"I use a common blow pipe and a small platinum muffle of my own construction, lined with asbestos cloth to prevent the tooth from being heated up too quickly. When I have finished firing, I remove the muffle and tooth to a small box partly filled with dry pumice, to allow of cooling very slowly. If this is carefully done there is no danger of checking the crown."



A Case of Replacing Nose, Lips and Jaw.

Abstract by **GEORGE RANDORF**, Berlin, Germany.

The patient, about sixty years old, had suffered for several years with cancer of the face. He was operated on in the surgical hospital, and sent to Dr. Heitmuller, Gottingen. The nose, upper lip and the front part of the upper jaw were wanting (Fig. 1). In the upper jaw on each side there still remained the second molar, and nearly all the teeth were left in the lower jaw. The speech of the patient was quite unintelligible, and in masticating his food continually passed into his nostrils. An Impression of the upper jaw was taken with plaster of Paris, after the nostrils had been filled with gauze. From the model, a piece was made to replace the lost part of the upper jaw, and carried the missing teeth. It was supported by two gold clasps around the molars. A small four-sided canula of nickel was vulcanized into this piece, opening on one side into the mouth, on the other into the nostrils, serving to retain the artificial lip and nose.

Next a piece for replacing the upper jaw was made, and the patient wore it one day. After it had been adapted well to the mouth, a closely fitting four-sided bar of nickel was put into the canula, which was rounded off towards the jaw and projected a little. It extended about three centimeters towards the cavity of the nose, in order to be united with the artificial lip and nose.

Next an impression was taken of the fixed piece and of the front parts of the face. The nickel bar came out with the impression and was attached to the model. The method of taking the impression is as follows: The patient closes the mouth, the open space of the nose is filled with gauze, through which a small tube is put for the patient to breathe, then the eyes and hairy places are covered with tissue paper which has been a little oiled; the face is covered with a thin layer of plaster and a second thicker layer is put upon the first, after this has hardened.



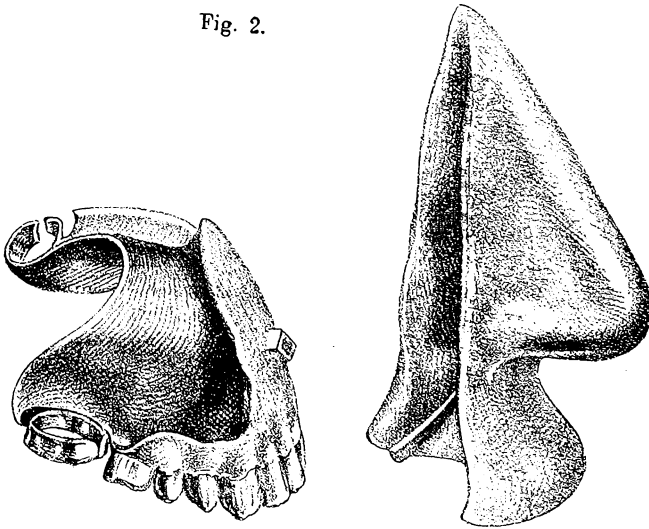
Fig. 1.



Fig. 3.

Great attention must be paid in constructing a piece for the nose to make it correspond with the age and type of the patient; photographs from earlier years are a great help. In this case there were no photographs. The model of nose and lip was obtained in the following way: A number of masks of stiff paper were made; one, the most suitable, was selected, and the nose and upper part of the lip were cut out. The nose still being too wide, was covered at the inside with a thin layer of white wax, heated a little, compressed, and the edges were pressed upon the model of the face. Where the edges of the nose did not meet the parts

Fig. 2.



of the face in a normal way, they were lengthened with wax. The under part of the lip was also made of wax. In several parts of the nose wax was added and so formed that the shape of the nose corresponded perfectly with the type of the patient (Fig. 2).

Then the nickel bar was fixed in the canula of the upper jaw piece worn by the patient, and the cast of the nose half filled with plaster, was put upon the patient's face, after his nostrils had been closed with wax.

When the plaster had hardened, the nose with the bar fixed in it, was taken off, and flaked. The front part of the tip of the nose, and the greatest part of the bridge of the nose were made of hard rubber, whilst the side parts of the nose, the upper part of the bridge and the upper lip were modelled out of soft rubber.

The piece being valcanized, the nickel bar was firmly united to it by the hard rubber, then the holes for the nose were cut out, and its inner parts polished as much as possible, in order to be easily kept clean, but the outside was left rough for the paint to adhere to it, the piece being painted to match the flesh.

The piece with the bar was now fixed into the canula of the upper jaw piece. It fitted well to all parts of the face, and could hardly be distinguished even from a short distance. The patient could easily take the appliance off. He was advised to join the artificial nose to the remains of the natural nose by a strip of court plaster, if in course of time it should get a little loose. An artificial mustache upon lip and cheek, to hide the space which showed when he laughed heartily, was not desired by the patient.

Fractures of the Upper and Lower Jaws.

Abstract by GEORGE RANDORF, Berlin, Germany.

Dr. C. Partsch and Dr. Perlinski report in *Dental M. f. Zahn* their observations of cases of fracture of the upper and lower jaws cured. In one case, there was a simultaneous fracture of the septum of the nose, and in another, fracture of the bone of the nose. In the former case, chronic deformity of the jaw had developed, the reason for this being repeated falls, whilst in the latter case, a severe wound was given as being the reason. Through this wound in the case of the child, the face had become distorted although the teeth had been quite unaffected. In the other case, a number of irregularities had been discoverable upon the fractured splinters of the upper jaw. In the first case, there was no complaint of internal troubles; in the latter, they were violent and took the forms of hyperæsthesia, sensitiveness in the teeth, accompanied by a sensation of loosening of the same. The detailed history of the illnesses is as follows:

1st—The twelve-and-a-half-year-old girl Else, daughter of a commercial traveler, appeared on the 6th of October, 1894, in the Dental Institute. An asymmetry of the face (Fig. 1) was observable, which caused the left upper jaw to be pressed far back. The left lip was slightly smaller than the right, the nose bent towards the left. Upon placing the finger on either side of the outer surface of the upper jaw, the one on the right side, it was found to be at least one centimeter in front of the

left one. The left nostril was also dilated more towards the left than the right side. The cartilaginous septum showed a remarkable deviation in this respect; that the right side appeared to be pressed together so that the right nostril was smaller than the left. The bone septum made no observable deviation to either side. Both walls of the nose were free. An examination of the mouth showed imperfections in the enamel, especially in the incisors and cuspids, but not in the molars or bicuspid; insufficient and faulty teeth had been developed. On the left side, there was a deviation of the alveolar process which lay far back. The mother



Fig. 1.

stated that the child had fallen several times. These falls were followed by bleeding of the nose, but the child had never had any facial disorders. The patient had come for our advice for a case of pericementitis.

The stonemason Henry H., of Doibschultz, came to the Institute on the fourteenth of July, 1894, and reported as follows:—

On the seventeenth of March, through the falling of a workmen's shed, a beam had struck him on the head with such force that he fell upon a stone, striking the left cheek, and received a severe wound upon it. He was taken to the hospital at Reichenbach, where he remained three weeks. A scar was perceptible upon his upper left eye-lid, the bridge of the nose was pierced with a number of bone splinters; it had also been fractured. The nose septum was bent to the left. The left jaw was flattened, the left eye pressed back and the eye-lid appeared lengthened. Patient stated that he saw double and complained of neuralgia of the infra-orbital nerve as well as a loosening of the teeth.

Regarding fracture of the lower jaw, the following is an interesting and unusual case:—

The patient presented with a fracture which had occurred in conjunction with concussion of the brain, and bursting of the tympanum of the ear. A further examination of this patient could not be undertaken as he proceeded immediately to a hospital.



Fig. 2.

On the twenty-sixth of October, 1895, the hostler Henty K., of Preisdorf, aged fifty-one years, came to the Dental Institute for treatment for fracture of the lower jaw. He had been kicked in the face by his horse, three weeks previously, and a well healed scar was visible. There was an abscess in the mouth (Fig. 2). There was swelling of the parts surrounding the abscess, the splinters of the lower jaw were loose, and the patient had much difficulty in speaking and eating. An inter-dental splint was applied and the patient sent home. After a space of three weeks, the abscess was healed and the fracture so firmly united, that nothing further was to be feared. Later on the jaws became thoroughly united and but a very slight deformity was visible.



The Diffusibility of Coagulants in Dentine.

By E. LAWLEY YORK, D.D.S., Chicago, Ill.

Having been many years engaged in the study of the chemistry of therapeutics, I have naturally been attracted to the articles by distinguished men published in our journals within the special field of our profession; and what I now present to you is based upon a careful study of the subject, together with the results of a long series of experiments, made by myself and then reviewed by others eminently qualified to criticize my efforts and to express an opinion as to their accuracy.

These experiments were made in various ways to show that carbolic acid will diffuse through dentine, in freshly extracted teeth that at the time of extraction were normal, also in teeth freshly extracted that had putrescent pulp canals; in the latter I found that there was slightly more rapidity of diffusion.

Carbolic Acid Diffused Through Dentine.

My first experiments consisted in taking a freshly extracted tooth, either having a normal pulp or a putrescent one; my experiments have been equally divided between the two classes.

After opening into the pulp chamber from the lingual or coronal aspect, according to the tooth that I was treating, and after gaining sufficient room to pass a hypodermic needle into the pulp chamber, thus avoiding cutting away the tooth structure unnecessarily, I removed the pulp, dried the canal or canals, as the case might be, and sealed the foramen at the apex with gutta-percha. I then injected a small quantity of a 95 per cent. solution of carbolic acid, which had been previously colored with a minute quantity of fuchsin, sufficient to fill the pulp chamber and about two-thirds of the canal, thus avoiding any oozing out upon sealing the crown with gutta-percha. I then wrapped the teeth in wet gauze and placed them in a receptacle I had made that would keep them at about 98° F. My aim through my experiments has been to make them as nearly as possible under the same conditions that are met with in the mouth.

The earlier experiments were generally with teeth left in the incubator twenty-four hours at least, but later I found that carbolic acid would pass through the dentine as far as the cementum in eighteen and one-half hours.

On taking them out of the incubator I made cross sections to preserve the bulk of the tooth for reference. In making a longitudinal section the tooth would be spoiled and only the section left; so that I should not have been able to show you the remaining portion from which the section was made. These were all mounted in Canada balsam, and show that the colored carbolic acid has passed entirely through the dentine. A vast number of these experiments were made with universal and satisfactory results; but to insure obtaining indisputable evidence, I commenced some other experiments in an entirely different way, which to my knowledge have never been attempted before. I will not weary you by repeating the manner in which the teeth were opened, pulps removed or canals cleaned; suffice it to say that the same mode of operation was observed in all my preliminary preparations of the tooth.

The next series of experiments consisted in placing in the canals and pulp chamber as much carbolic acid as would be used in the ordinary treatment of a tooth. After sealing the teeth I placed them in a bag that was tied to the nozzle of a faucet, and water was allowed to flow over them for two or three hours. The cementum was then ground off on two sides of the root, washed again, and the teeth suspended in water nearly up to their anatomical necks. The earlier ones I usually left twenty-four hours, but later I found that eighteen and one-half hours was sufficient time to detect carbolic acid in the water with the bromine water test.

In some cases I coated the whole of the tooth with sandarac varnish to prevent the possibility of any carbolic acid coming in contact with the tooth structure. Out of the many hundred tests made I did not fail in a single case to detect carbolic acid in the water.

To make sure that I was doing this as carefully as possible, I requested my friend, Dr. J. G. Reid, to seal carbolic acid in some teeth. This he kindly consented to do. The results were just the same. I might also add here that the same gentleman has witnessed a great number of my experiments, and can vouch for the care I bestowed upon them to make one and all reliable. As a control test for the above I made two glass tubes to resemble teeth, as you will see here (showing examples). Dr. J. G. Reid sealed one, and I the other. These have been placed in water indefinitely, with no reaction with bromine water. You will also notice that I have not even coated these with shellac varnish.

Later on, at the suggestion of Dr. P. J. Kester, I selected sound teeth whenever I could, and opened from the apex, slightly enlarging the for-

amen, and passing the carbolic acid in this way into the pulp chamber, then sealing and coating with sandarac varnish, washing, etc. I suspended the tooth in water, crown down, thus excluding any possibility of leakage. The results are just the same—carbolic acid in the water.

It is not necessary for me to give any more examples, for as I have already stated, the results were the same in every case.

**Coagulated
Contents of Tubuli
No Barrier.**

The following experiment was intended to demonstrate that carbolic acid does not form an impenetrable coagulum at the orificial end of the dentinal tubuli, with their albuminoid contents.

A tooth was taken that had contained a 95 per cent. solution of carbolic acid in the pulp chamber and canals for seventy hours. The canal was dried, and a saturated solution of sodium chloride was inserted by means of a hypodermic syringe. The end was sealed with gutta-percha and then coated with sandarac varnish. This was allowed to dry, after which it was washed one hour with water. The tooth, which had only been opened at the apex, was suspended in water, crown down, about two-thirds of its length being immersed. In three hours I tested the water with a drop of a 25 per cent. solution of argent. nitras, which resulted in large quantities of the chloride of silver being thrown down, thus proving beyond a doubt that the coagulum formed by carbolic acid is not a barrier to the passage of other substances through the dentine, as has been so often stated.—*Dental Review*.





A Practical Treatise on Mechanical Dentistry.

By JOSEPH RICHARDSON, M.D., D.D.S.

Late Professor of the Principles of Prosthetic Dentistry in the Indiana Dental College.

Seventh Edition—Revised, Enlarged and Edited

By GEORGE W. WARREN, D.D.S.

Chief of the Clinical Staff, Pennsylvania College of Dental Surgery, Philadelphia ;

Author of "A Compend of Dental Pathology and Dental Medicine,"

and "A Compend of Dental Prosthesis and Metallurgy."

With six hundred and ninety-one illustrations, many of which are from new and original drawings.

P. BLAKISTON, SON & Co., Publishers, Philadelphia, 1897.

During a long period of years, in which have appeared separate editions, this work has held its own as the authority for what was most scientific and up to date, in mechanical dentistry. In 1893 appeared the sixth edition, which, while it was not fully abreast of the latest improvements of the day, was dignified and original in its tone, and represented the best work that could be placed in the hands of a student. Professor Richardson has died, and we are now presented with that misnomer, the seventh edition of Richardson, prepared by Dr. Warren.

In these days of scientific attainment it requires something more than an ability to compile various essays, a command of the English language and a publisher's request, to issue a text book for students.

It has been our aim in this department of ITEMS OF INTEREST, to hold up before the light of the present day, all scientific publications that have been offered for review, and to know neither friend nor foe in our recorded opinions of the same.

We presented a critical analysis of the major portion of the recent work on Prosthetic Dentistry by Prof. C. J. Essig. We searched deeply for what errors of commission and omission we could find, in the firm belief that by so doing we would be able to aid in improving any subse-

quent edition. Our conclusions nevertheless advertised a work, far superior to anything ever dreamed of by old dental students.

Closely following this work, appears the seventh revised edition of Richardson, or rather the Mechanical Dentistry of Warren, with the aid of Richardson.

On the first page of the fly-leaf, the publishers endeavor to promote the sale of the book, by reprinting the book review from the *Cosmos*, of the sixth edition published in 1893. This is not only in bad taste as a bold attempt to deceive the innocent and unwary first year students, by showing them an article loud in praise of what is practically another book, but like all boomerangs, has done more harm to the book by calling attention to the review of the present volume in the *Cosmos*.

The only proper review of this volume, is to compare it with Essig's work.

When the book is seriously compared with the American Text Book of Prosthetic Dentistry, it not only can not be praised, but it must be seriously condemned, as tending to lower the high plane reached by that publication. After a very careful examination of the volume, we find it impossible to enter into a detailed account of the errors that meet the careful observer, from beginning to end. The book is unsystematic; fulsome where it should be brief, copying page by page valueless essays of different writers, and too brief in anything that is of recent date. It abounds in errors of fact and deduction and wallows in the lore of antiquated medicine and physics. The chapters on crown and bridge work are especially noteworthy as a hodge podge of different writers, put together with so little judgment and discrimination that frequent contradictions follow each other. The chapter on electricity is simply ludicrous.

Some Methods and Appliances in Operative and Mechanical Dentistry.

By R. P. LENNON, London, England.

With Illustrations.

Claudius Ash and Sons, Limited, Publishers—1897.

This small book of one hundred and eight pages gives us a very good insight into the inner sanctum of a successful British practitioner. In fact it represents the results of forty years of active work, which is

the only excuse for its publication. The honesty, earnestness and conscientious spirit of the author are stamped indelibly on every page.

No one can have a doubt as to his love for dentistry, after perusing the various chapters. It is a practical treatise, entering into all the minor details of whatever the author discusses, so that one may read and practice, if agreeing.

In prosthetic work the author endeavors with much sophistry to convince himself of the inferior quality of plaster of Paris, as an impression material, when compared with compound, but one feels that it is much labor spent in vain. We forgive this when we see how rigorously Mr. Lennox takes up the cudgels against the use of vacuum chambers. Americans could learn much from his advice on this point. His methods of casting dies are valuable, and his description of how to retain full dentures in a patient ninety-seven years of age, is not only interesting, but instructive.

The little book contains so much of practical interest that we feel compelled to overlook the peculiarities of diction, which are nevertheless noteworthy when we consider the high preliminary education said to be demanded at the present time in Great Britain.

Illustrated Dictionary of Medicine, Biology and Allied Sciences.

By GEORGE M. GOULD, A.M., M.D.

Third Edition, Revised. P. BLAKISTON, SON & Co., Philadelphia.

In these days, when the art of compiling cyclopedias has reached the highest stage of perfection, it is not strange to find the old fashioned "Medical Dictionary" displaced by this masterly example of the modern encyclopedia.

In the preface, the author explains that it has been his purpose to make his work something more than a mere medical dictionary. The work aims, first—to include the many thousands of new terms that have been introduced into medicine during the last few years; second—to give an epitome of obsolete or obsolescent terms, that students may meet in searching through ancient tomes; third—to include the principal terms of biology; fourth—to give the book an encyclopedic character; fifth—when necessary, to give a pictorial illustration, when mere words would be inadequate to a full explanation; sixth—to lend the influence of the

dictionary towards a more phonetic orthography; seventh—to simply and plainly indicate the proper pronunciation of words.

To say that these aims have been attained in a most magnificent manner, would be truthful, but this simple statement would not adequately indicate the merit of the book.

The work opens with a series of lists of abbreviations used in general medicine and allied sciences, and also lists of prefixes and suffixes.

It is worthy of note that in a list of "Degrees, Diplomas, and Qualifications," the D. M. D. of Harvard University is omitted, as is also the M. D. S. of New York State, though the D. D. S. of our American Dental Colleges is given, as is also the L. D. S. of Canada. This shows that neither a great university, nor a great State, may hope to make a special degree widely known, and should be a hint to those who are fond of styling themselves Stomatologists, that it will be many years before their patients recognize them by this new title, and it might be well for some of us to admit that we are dentists until the new century dawns.

Dispersed through the text are one hundred and ten tables, which alone add tremendous value to the book, and evince great and laborious care in their preparation. It is probable that in modern literature, there can not be found so complete and digested a resume of surgical operations, of bacteriology, of parasitology, or of tests, as these tables furnish. For example: under "Anæsthetic," the table gives a complete list of all drugs which have been relied upon for general or local anæsthesia, and also the various combinations of drugs with authorities for each, as well as the different methods and appliances employed. Bandages and knots are not only enumerated, but excellent illustrations amplify the text. The tables of Arteries, Muscles, Nerves, Regions, Sinuses, and Sutures, must prove helpful to the undergraduate student, as well as beneficial to the older practitioner seeking for a name which may have slipped from his memory.

The definitions in general are fully comprehensive, and in all important cases assume an encyclopedic character; as for example, the names of medicines are followed not only by a statement of their chemic composition or origin, but their uses and dosage are also given.

In short, the dictionary is a compendium of all knowledge either requisite to the medical student, or which he may find useful in his sorties into collateral sciences.

Great praise is due to the author and his collaborators for the painstaking care with which they have pursued their purpose, as well as for their scholarly results. The publishers are to be congratulated upon the fine letter press and general appearance of the book which they have produced, evidently without stint of money. No medical or

dental writer should delay the purchase of this book, which will so greatly lighten his labors, and perfect his style.

Catching's Compendium of Practical Dentistry for 1896.

By B. H. CATCHING, D.D.S., Atlanta, Ga.

Editor and Publisher.

Copyrighted, 1897.

The 1896 edition of the work is a large volume of three hundred and seventy-eight pages. The idea of a compendium is unquestionably a very good one, and one that would be very valuable if properly carried out. It should be a digest of everything important that has been printed during the year, and any work that is especially written for the Compendium, unless it be a digest of other recorded work, is very much out of place.

The editor may lose a few of his unknown author-subscribers, if he institutes this reform, but it is to be hoped that it would be more than made up by subscriptions from men who now find the work of little value. If the opinion should ever become current, that only the writings of subscribers are to be quoted, the book will become entirely valueless.





Northern Ohio Dental Society.

At the annual meeting, held at Put-in-Bay, June, 1897, the following officers were elected for the ensuing year:

President, L. P. Bethel, Kent; Vice-President, L. L. Barber, Toledo; Corresponding Secretary, W. T. Jackman, Cleveland; Recording Secretary, F. W. Knowlton, Akron; Treasurer, W. H. Fowler, Painesville.

Northern Iowa Dental Society.

The third annual meeting of the Northern Iowa Dental Society, will be held at Mason City, Iowa, September 7, 8, 9.

Arrangements already made indicate an interesting and profitable meeting.

A cordial invitation is extended to all members of the profession to meet with us.

Wm. H. Steele, Sec'y,
Forest City, Iowa.

Idaho State Dental Society.

The Idaho State Dental Society which was temporarily organized last October, was permanently organized June 8th by the adoption of a Constitution and By-Laws, and the election of permanent officers for the ensuing year, as follows:

President, Dr. H. H. Bettis, Boise City; Vice-President, Dr. Sealkil, Caldwell; Secretary, E. H. Maberly, Boise City; Treasurer, Dr. B. B. Swan, Mountainhome.

Four committees were appointed, viz.:—Executive, Programme, Clinics and Papers, and Membership.

The next regular meeting will be held at Boise City, the second Tuesday in June, 1898.

E. H. Maberly, Secretary.

Howard Dental Alumni Association.

"Alumni Day" was observed for the first time on Monday, June 28, 1897, by this Association, and was devoted principally to an exhibition of the work of the Dental School of the past year by the freshman, junior and senior classes. Patients were present, showing treatment for fracture of the jaw, cleft palate and in orthodontia. Models and appliances were also shown. There were one hundred and fifty-two visitors registered and shown through the various departments. Clinics and demonstrations were given by Prof. Fillebrown, George F. Grant, Forrest G. Eddy, J. G. W. Werner, D. M. Clapp, Joseph E. Waith and Wm. H. Potter.

Dr. Fillebrown performed a successful operation for a child six years old in staphyloraphy.

Dr. Clapp gave an exhibition of the X-ray, and showed its utility and practical value in dentistry, by means of a patient present in the chair, etc.

Entertainments were given in the afternoon as follows: A barge ride, a bicycle run and a theater party, of all of which many availed themselves.

Eighty-eight persons gathered at Young's Hotel, Boston, at five P. M., to enjoy the twenty-sixth annual banquet, and listen to speeches, and reports of officers of the past year.

Rev. George Hodges, A. M., D. D., Dean of the Episcopal Theological School of Cambridge, Mass., was the guest and orator of the evening, and eloquently pictured the events which have happened the past six months.

Dean Smith gave a synopsis of the condition of the School the past year, saying that the graduating class numbered thirty-two—the largest within its history—that the School funds had increased to \$48,000.00 in eight years, and that there were one hundred and thirty-two students in the School during the year, including two post-graduates. The incoming freshman class numbers at least thirty.

Charles W. Berry, '97, spoke in a witty vein for the graduating class.

The election of officers resulted as follows:—

President, Joseph T. Paul, D. M. D., '91, Boston; Vice-President, Frederick Bradley, D. M. D., '86, Newport, R. I.; Secretary, Waldo E. Boardman, D. M. D., '86, Boston; Treasurer, Harry S. Parsons, M. D., D. M. D., '92, Boston; Executive Committee, Waldo E. Boardman, D. M. D., '86, Boston; William P. Cooke, D. M. D., '81, Boston; Frank T. Taylor, D. M. D., '90, Boston. The officers of the association compose the Council.

Waldo E. Boardman, '86, Secretary.